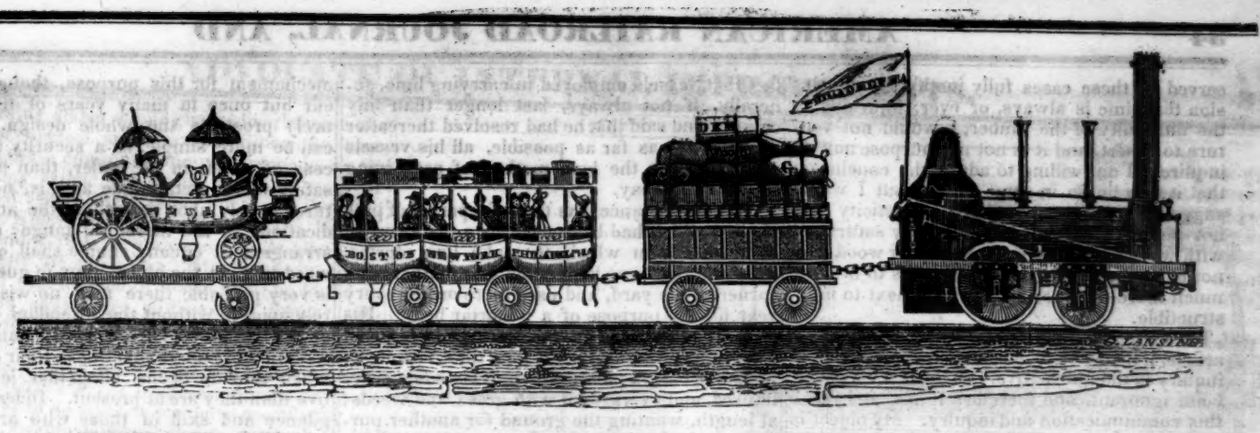

AMERICAN RAILROAD JOURNAL,
AND ADVOCATE OF INTERNAL IMPROVEMENTS.

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AMERICAN RAILROAD JOURNAL, &c.

NEW-YORK, JANUARY 25, 1834.

SAFETY APPARATUS FOR STEAM BOILERS.—An apology is due to several of our esteemed correspondents for the delay which has occurred in the publication of their communications. That of Lieut. A. C. Twining and of J. S. Williams, Esq. of Cincinnati, Ohio, were received a long time since, but have been delayed by my absence and a desire of giving another communication upon the same subject, in the same number of the Journal. It is not, however, in readiness, and we will not longer delay those which have been so long in hand.

The communication of Mr. J. N. Pomeroy, describing a new mode of constructing vessels, has also been some time in hand. It is, indeed, as he observes, "as a water craft entirely unique," and as such, we submit it to the observation of the public.

At a meeting of the Stockholders of the LAKE ERIE AND MAD RIVER RAILROAD COMPANY, held, as we are informed, at Urbana, January 9th, 1834, it being ascertained that more than five thousand shares had been subscribed, they proceeded to the election of officers, when the following gentlemen were duly appointed :

President—Joseph Vance.

Directors—Horatio G. Phillips, Pierson Spining, John C. Pearson, Benjamin M. Piatt, William Townsend, Charles G. Swaim, Jonathan Harshman, Charles Cavileer, John H. James, Josiah Hedges, James Hollister, and John G. Camp.

Treasurer—John H. James, of Urbana.

Secretary—Jeremiah Warder, Springfield.

Committees were appointed to take such other measures as they may deem proper to cause the subscriptions of stock to be filled, to employ a competent engineer for the final location of the road, to commence on the first day of May, and so soon as 800,000 dollars shall be taken, the work is to be put under contract, from Dayton to Urbana, and from Portland to a point 40 miles south, and beyond Tiffen.

MR. BURDEN'S STEAMBOATS.—It is said that a company of gentlemen in Albany have purchased of Mr. Burden the exclusive right to use steamboats made after his model, for the conveyance of passengers upon the Hudson river. Mr. B. reserves to himself the privilege of using his boats on the Hudson for freighting and towing.

However great may be the improvement which Mr. Burden had made in the construction of boats to be propelled by steam, we think further progress in the art will yet be exhibited. Mr. Langdon, of West Troy, has already a model of a boat prepared, which promises fair to outstrip Mr. Burden's. While it combines all the requisites which B.'s plan furnishes for obviating the resistance of fluid through which it passes, it also possesses the additional advantage of a greater buoyancy. It may also be constructed at a less expense, and does not appear so likely to get out of repair. We shall not be surprized to see it rank before Mr. Burden's, both as to speed and safety.—[Troy Budget.]

The following extract is taken from a London paper :—

Application is intended to be made in the ensuing session for a bill "to authorize in the constructing, improving, and using ten feet in width of the carriage way, or waste ground on the side of the carriage way, of the turnpike roads from Islington, in the county of Middlesex, to the town of Birmingham (being part of the several roads constituting the Holyhead mail-coach road between those places) into a hard and solid road, for the passing or travelling thereon of locomotive steam carriages;" comprising also powers to levy and collect tolls upon such carriages, and to apportion them between the trustees or proprietors of the said roads, and the persons who shall be authorized to construct such intended steam carriage road, and to alter and increase the tolls, rates, &c. authorized by the various acts at present in force.

RAILROAD, GERMANY.—The subscription for the intended railroad between Nuremberg and Furth amounts already to 130,000 florins.

Our "highly esteemed correspondent," the writer of the following extract and communication, need not be at all appprehensive that his communications will be omitted "agreeably to the law (of editors) in such cases made and provided" in consequence of a "press of other matter"—especially if they should have the same, hereafter, to recommend them as those already received : they will always find a place in the Journal. We cannot, however, forbear to publish the following extract from his letter by way of showing his philosophy, and at the same time recommending it to those who may have occasion to exercise it.

"I am sorry that I could not have furnished you with an article less prolix, and more worthy of the Journal; but you need not hesitate at declining to use it. You have only, "agreeably to the law (of editors) in such case made and provided," to express your "profound regret, that the press of other matter, &c. &c. obliges you to omit the publication of the communication of your highly esteemed correspondent, &c. &c. &c.—and this, you know, applies the anodyne to all wounds of this kind."

On the Petrifying of Wood, as applicable to Timber for Railroads, &c. By G. [For the American Railroad Journal and Advocate of Internal Improvements.]

Some time since, in an eastern paper, there appeared an article stating that some person had discovered a method of completely petrifying wood, and so preserving it nearly, or quite indestructible, by saturation with HYDRATE OF LIME. If any of your correspondents can furnish any information of the process; or any facts which may elucidate the subject, perhaps they might render an important service to the cause of railroads, in situations which require or admit the use of wood; and I would respectfully suggest to any who may recollect such facts, that the communication of them to the Railroad Journal would be a gratification to at least *one* of its readers—probably to many.

It is said that timber imbedded in lime, under certain circumstances, as, for instance, the ends of beams inserted in the walls of brick houses, decays sooner than in the open air—becomes dry rotten, &c. I have heard it argued that this is owing to the causticity, or some other quality of the lime; and to prevent the effect, it has been a practice, in some cases, to leave a space for the ends of the beams, large enough for the free circulation of air around them, and free from contact with the lime used in the construction of the walls. Whether the facts ob-

served in these cases fully justify the conclusion that time is always, or ever, injurious to the durability of the timber, I would not venture to assert, and it is not my purpose now to inquire. I am willing to admit the conclusion that it *may* be so in some cases; but I would suggest the inquiry whether its causticity may not be so completely destroyed by saturation with water, and in this state whether wood may not be so far impregnated with it as to become much more durable, and perhaps next to indestructible.

The notice mentioned at the introduction of this article, if it may be relied on as fact, answers the inquiry in the affirmative. Of the fact, however, I am ignorant, and therefore it is that I make this communication and inquiry. My object is to excite others to further investigations, and with this end in view, I beg leave to state some facts of which I have been informed, which seem to me to prove sufficiently, that lime may, in *some* situations, be made to contribute very essentially to the durability of wood; and, perhaps, may suggest a remedy, to some important extent, for the disadvantages to which wooden railroads are obviously liable.

Some years ago, I was travelling on the sea-coast of Maine, and put up for a night at the house of an elderly gentleman, who had been all his days concerned in ship-building and navigation, and appeared to be a sensible, shrewd observer. He had, that day, a new vessel arrived from her first voyage to a foreign port, and among other circumstances was told that she had not leaked a *drop* during the voyage. This led me to remark that she must have been exceedingly well built. He replied that he thought the tightness of the vessel was owing, in a measure, to the *lime* with which she had been stuffed while building. He had been led to believe that lime was a better preservative of the timber of ships than salt, or any other substance heretofore used for that purpose. While this vessel was being built, and before ceiling up the inside, he had the interstices of the timbers filled with new stone lime, pounded fine enough to be driven in between the timbers, and rammed in as solid as was possible in that state; the planking was then finished, and the lime left to slake and fill the remaining interstices. His theory was, that the air, and the moisture of the wood, and perhaps a little water, which might be expected to leak into the best built vessel, would slake the lime so that its expansion would fill every chink in the timbers, and penetrate the pores of the wood itself, sufficiently to prevent speedy decay; but any effect in rendering the vessel more staunch he had not anticipated. He, however, concluded that the expansion of the lime, though, from its small quantity, not sufficient to injure the vessel by its mechanical force, yet had been sufficient, by the addition of the little water which had leaked in, to form a mass of mortar so solid as to prevent, at least in some degree, the further ingress of water from without. This, however, was a new idea, and the present experiment was not conclusive; but as to its effect in preserving the timber, he had no doubt; and he related several facts in his own knowledge in support of this opinion.

As one instance, he stated that he had once owned a coasting vessel, built of the common timber of the coast of Maine, which, when nearly new, was once bound from Thomaston to Boston, with a cargo of lime, and on her passage went ashore somewere between Cape Ann and Boston, and bilged. The lime slaked, burnt the deck and upper works, and, as might be expected, penetrated the timbers throughout. The vessel was unloaded, repaired, and lived, I think he said, thirty or forty years after this event; had undergone occasional repairs since, but the principal part of the original timber remained. When, after that that time, examined, it was found that the original timbers, which had been impregnated with the lime, were *perfectly sound*, while those which had been added *since* that time, were all, or nearly all, *rotten*. He adduced, also, the fact that vessels employed in carrying lime, generally, if not always, last longer than any others; and said that he had resolved thereafter to saturate, as far as possible, all his vessels with lime, as the best method of preserving them from decay.

Another instance was that of a parcel of pine planks which had been used as a platform, *on the ground*, on which to make lime mortar. This platform was laid by his grandfather, in a corner of the yard, and used more or less every year for the purpose of a "mortar bed." His father continued it in the same use; himself, the grandson, continued it for a time, as long as he had occasion; after which, it lay some years unused, and overgrown with grass and weeds; at length, wanting the ground for another purpose, he had it torn up and removed, expecting to find the planks entirely rotten—but, to his surprize, found them sound, and, to use his forcible expression, "as hard as a bull's horn." This was after they had lain in contact with the surface of the ground, exposed to all the vicissitudes of the atmosphere, I think he said, *about sixty years!*

It is now near 15 years since I received these accounts from the old gentleman, and I have never seen him since: my recollection, therefore, may not be perfectly accurate in the details of his statements, but of their *substance* I feel certain. When I saw the notice referred to in the beginning of this article, respecting the preservation of timber by means of hydrate of lime, these facts at once recurred forcibly to my mind, and I was led to the inference that, in the cases mentioned, there had been so much water present as to destroy the *caustic* properties of the lime, convert it to a *hydrate*, and hold so much of it in solution, and in such a situation, as that it might always be presented to the wood for its absorption, until it had become entirely saturated, and the wood thus effectually preserved.

Will some of your correspondents recollect, and furnish for publication in the Journal, such facts as may confirm or correct this inference, and trace out its legitimate consequences if confirmed? G.

Safety Apparatus for Steam Boilers. By Alex. C. Twining. To the Editor of the American Railroad Journal.

Sir,—I have read several interesting articles in your Railroad Journal, the object of which was to propose one plan and another for protecting steam boilers against that danger of explosion which arises from the exposure of the flues to a violent heat when the water is permitted to descend below them. Respecting this hazard, (which is of frequent occurrence, as any man may be satisfied who takes time and pains to make extensive inquiries, and concerning which I speak reflectingly when I express the opinion that it subjects the traveller to more multiplied and more fearful risks than any other circumstance attending the steam engine,) there can scarcely be too much discussion, until some adequate means of public safety in relation to it shall have been discovered and brought into common use. In this article I design to add one more to the proposed expedients for safety, after bringing up to view one or two principles which are necessary to a clear understanding of the precise object before us, and which are often overlooked by those who discuss this subject.

It is a principle, or, at least, it is a truth, which ought to take the place of a principle, not to be lost sight of on this subject, that mechanism, ever so excellent, cannot be made to supersede the practice of that same strict and personal examination by means of the gauge-cocks, which is now enjoined upon the engineer and other attendants of the engine. The propriety of this assertion will be understood by every one who is practically acquainted with the imperfection of materials, and knows that machines, put together according to the best rules of art and maxims of science, are subject, nevertheless, to irregularities, which, in mechanism for this purpose, though they occur but once in many years of time, do entirely prostrate the whole design. Nothing can be more simple, as a security against excess of steam in the boiler, than the present safety valve; yet, simple as it is, no one ventures to rely upon it without the attendant indications of the mercurial gauge; and if any arrangement equally simple shall ever be devised to meet the object now in question, as it is very probable there may, no wise man will rely upon it without the attendant indications of the gauge-cocks,—at least, until the construction of boilers shall make their explosions, when they do occur, altogether less destructive than they are at present. Indeed, if the vigilance and skill of those who are entrusted with the engine might be implicitly relied on, there would be little occasion for seeking any other safeguard: but *men* are scarcely less fallible than *mechanism*; and if the defects of this make it an uncertain dependence, the defects of the other ought, on the same principle, to teach us the necessity of providing a check against those causes of danger which do continually act,—such, for example, as deficient skill, or inattention, or drowsiness, or the use of spirituous liquors, or unforeseen accidental circumstances—causes that beset the passengers' way with dangers which a timely prevention generally disarms, but which sometimes give terrible demonstration that they are not imaginary. From such considerations we infer that no apparatus can do away with the necessity of that personal vigilance which is now the only dependence for safety—that the single end of an apparatus should be to provide a check upon those causes which make that first dependence sometimes to fail, and that such an apparatus is really most necessary, notwithstanding the opinions of many practical men to the contrary.

But, in forming such an apparatus, it should be a principle to make its indications of such a kind as to give the early notice of impending danger, not to passengers, but to those attendants on the engine whose business it shall be to apply the remedy. An opposite idea, it is true, has been incorporated into most of the current devices, for sounding or ringing alarms, or regulating moveable indices, open to the sense of all who may wish to gauge, at any moment, the precise dimensions of their travelling security. Not that bells or an index might not be so arranged as to give timely notice in the proper quarter only; but those projectors who have contemplated arrangements for indiscriminate alarm, have taken measures to defeat the success of their own projects, since experience has shown that the excitement and headlong impulses of a mass of people, acted on by the impression of impending danger, are almost as much to be dreaded as any common danger itself; and it is from their experience of this tendency, as well as from motives of immediate interest, and pride of personal feeling, that captains and proprietors would naturally discountenance every plan which would proclaim indiscriminately each momentary danger. The thing to be aimed at is to give notice when danger is at hand to those who have the means of averting it, and not at once to others; for, although it were ever thought a doubtful question whether passengers ought not at once to know the crisis, yet it is not a doubtful question whether captains and proprietors will readily consent that they shall; and still less is it doubtful respecting any specific means of safety, whether it will come into general use without the favor of those authorities.

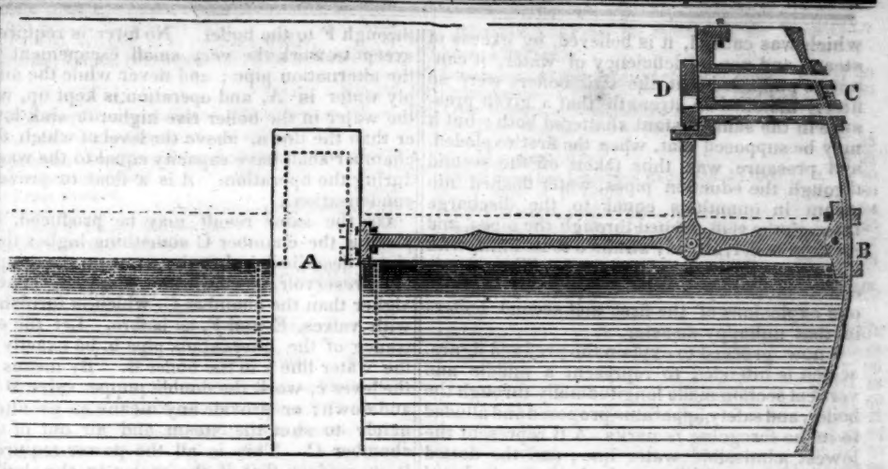
These considerations, with others, led the writer many months ago to suggest to two or three individuals, of great skill in the steam engine, an arrangement for causing a small puff of steam to issue and alarm the engineer and firemen, in case the water should fall too low, while by others it would be undistinguished from the common sounds that now issue from the boilers, unless, indeed, the evil were permitted to continue uncorrected, in which case the

increasing alarm would give indiscriminate notice of neglect and hazard. Since the time when those communications were made, an interesting article has found insertion in your Journal respecting a safety apparatus invented by Mr. Kennedy, of New-York, which, if I understand it rightly, embraces in its plan substantially the same idea. Mr. Kennedy, therefore, if that method of alarm shall be found to possess advantages sufficient to bring it into use, will be entitled to the merit of having first brought the idea up to public notice; though his particular arrangement, there is reason to fear, would fail of success, from a circumstance which deserves to be pointed out more specifically.

The circumstance alluded to, (and which, indeed, is common to most other plans that have been proposed for this object,) is that the rod, which connects Mr. Kennedy's float with his escape valves, is made to pass through the boiler in such a manner that this rod, or rather the "wadded stopper" which it works, is subject to the atmospheric pressure above, and the steam pressure beneath; but as the atmospheric pressure is subject to changes equivalent to two inches of mercury, and the steam pressure in the boiler to changes much greater, it may be seen at once that a stopper of no more than one inch in area would be subject to influences which would of themselves greatly impair the accuracy of the indications of any float of moderate size. Add to this the friction of the stopper, which by reason of its packing must adhere to the tube with a considerable force, and there will be found in these three disturbing forces reason to apprehend a very capricious action of the float.

In my own arrangement, as well as the preceding, there are valves and a rod; but the rod is to work wholly in the steam, and is to be connected with the float by the intervention of a lever, which gives a considerable mechanical advantage,—say, an advantage of three to one. At the same time, packing is made unnecessary by the adoption of a metallic plate, working upon another plate in the manner of the common slide valve; but this will be more fully understood when we shall come to the figure and explanation.

None of the plans in your Journal which I have noticed, except Mr. Kennedy's, have guarded against the uncertain amount of action in the float from its ebullition or foaming of the water. Mr. Kennedy has proposed a box, in which his float is to rise and sink; but I propose to accomplish the same object only by adapting the form of my float to that purpose, in the manner following: Suppose a float of the form and in the position of an upright cylinder, sunk just to touch the boiler at its lower end, or within an inappreciable distance of it, the water in which it floats being dead or free from ebullition; then when steam began to be generated, the water would swell in bulk and rise in height around the cylinder, but the upward pressure upon the cylinder's base would remain unvaried, since the specific gravity of the column above it is as much diminished as its height is augmented. The cylinder, therefore, would neither sink nor rise, but would retain its position unaltered until the absolute quantity of water in the boiler became itself altered. By adopting thus a cylindrical float, to sink in the dead water as near to the bottom as the requisite play of the float will admit, we may secure the necessary regularity of action. But, in case it should be inconvenient for the float to sink so deep, let us suppose the immersion to be only to a part of the water's depth—it may be one-third, or one-fourth—then, if the immersed cylinder suddenly break off in its shape to a less diameter at the water line, forming a smaller cylinder, resting immediately upon the larger, and united to it at the precise line of the water, and if the cross section of the smaller bear the same ratio, in area, to the cross section of the larger, that the immersion in dead water of the combined float bears to the average depth of dead water required in the boiler, such a float will be very nearly stationary when the water changes from its dead state to a state of violent ebullition, or foaming. By the principles of hydrostatics, it would be perfectly stationary if the density of the floating column of water in ebullition were alike from bottom to top; but this is not the case in reality, by reason of the bubbles of steam enlarging a little as they ascend, and the greater quantity of steam thrown up along the sides of the boiler, establishing a superficial current from the sides to the middle. The variation from equal density, however, in the middle, is not great, and it is in favor of the float's descending too low when the water foams: which is on the side of safety. One of the gentlemen to whom I had communicated, in conversation, the principles of this apparatus, objected to hollow floats; that he had often in the actual trial found them unaccountably to fill with water. This result was doubtless occasioned by minute imperfections in the metal and workmanship, which did not manifest themselves until the float became subject to the steam pressure in the boilers, and to the corrosive action of the water and gases. These imperfections it may not be easy wholly to avoid; and the objection led me to adopt, in my proposed arrangement, a float entirely open at the bottom, which would always be emptied of water by the ascending steam, and its buoyancy kept unimpaired so long as there is occasion for its action.



Before leaving this subject, I will remark upon one mechanical principle, which, if real, possesses the greatest practical importance. The nature of the danger which is to be dreaded, in the case of a deficient supply of water in the boiler, is very generally understood—that is, if the water line descends below the flues, they become intensely heated, and when the water, either by ebullition or by injection through the supply cock, again reaches the incandescent metal, an immense quantity of vapor is immediately generated, which neither the safety valve can discharge, nor the boiler sustain. This is a common and satisfactory statement, and one which receives confirmation from the valuable experiments of Professor Johnson, of the Franklin Institute. There is, however, a mode of action in this vapor, and one which may be, in particular cases, of intense efficacy, that involves a mechanical effect additional to those above mentioned; and I embrace this opportunity of calling the attention of men of practical science in the steam engine, to the principle involved, as I do not remember ever to have met with it. It is well known that, if a charged gun barrel be so loaded as to leave a considerable space between the ball and charge, the piece will burst when fired. The French, and I believe the military rationale of the fact is, that the flame, reverberating from the ball back to the charge, creates a more perfect and sudden inflammation in the chamber than would otherwise take place. But, although this explanation does assign a real cause, we might ask whether the amount of gas thus suddenly evolved, can exceed that which was pent up in the same chamber, at the proof of the piece with double or even treble charges, and weight of ball? A more adequate cause might be assigned, arising out of the established principles of re-action: for when inflammation of the charge takes place, the whole volume of gas, urged by a pressure equivalent to hundreds of atmospheres, rushes towards the muzzle of the piece; but when it meets the ball, there is a sudden check in the moving mass, which must re-act laterally upon the chamber in the manner of a shock or blow. The accumulated force which the gaseous material has been progressively receiving from its evolution to its impact on the ball, is brought to bear in one instantaneous impulse on the sides of the piece which cannot resist the momentum, and swells or bursts. A most able mechanician, the same who is engaged in conducting the gun factory of the late Eli Whitney, of New-Haven, informed me, not long ago, that, at one period of their inspections by the United States' officer, more than a hundred barrels were ruined by being swelled or burst at the chamber, from some cause most inexplicable to the artificers, till at length they made a ponderous rammer, to drive home the balls with most unerring certainty, and the mysterious effect was experienced no longer. Now, to apply this principle of force to the subject in hand, when, in the case supposed, the water, by ebullition or by injection through the supply cocks, reaches the incandescent metal, not only an immense volume of vapor is suddenly generated, but, being generated within narrow limits, it must rush on every side with great velocity, and reach the limits of its confinement with accumulated momentum, and a shock similar in kind (though vastly less in amount) to that experienced in the case of the gun barrel already dwelt upon. This principle of force is a real cause of rupture, of an unknown degree of efficacy, and one which ought not to be neglected by practical men; for it may sometimes occur, in consequence of the same mode of action, that even without a deficiency of water, but merely from excess of steam, our present means of safety may become a cause of explosion; for if an overstrained boiler were suddenly relieved from its state of undue tension by a hasty opening of the escape valves in full, the water, being of high temperature, would fly into steam, which, though not in volume too excessive for the boiler to bear, would certainly rush with an upward motion to the limits of the boiler, and encounter the resistance there with a shock which might prove fatal. In every such case the escape valves should be opened very gradually. This may possibly prove to be the explanation of the circumstances which have been accounted so mysterious, that boilers placed apart, and connected only by the steam eduction pipes, manifest a sympathy through which, in case of rupture, a second boiler often follows the destiny of the first: for instance, in the late disaster of the New-England,

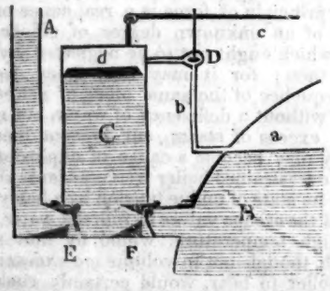
which was caused, it is believed, by excess of steam, and not by deficiency of water, it cannot be supposed that the two boilers were so nicely matched in strength that a given pressure in the same instant shattered both; but it may be supposed that, when the first exploded, and pressure was thus taken off the second through the eduction pipes, water flashed into steam in quantities equal to the discharge through the vent opened through the pipes, and met the boiler, already strained to its limit, with a momentum which proved fatal. This idea is countenanced by the distinct, yet very contiguous explosions of the first and second boilers in that unhappy disaster.

I now proceed to explain the prefixed figure, which is intended to represent a middle and vertical section made longitudinally through the boiler, and safety apparatus proposed and alluded to in the foregoing remarks. A B represent the lowest admissible water line; and the dotted line, above, the highest. At A is a cylindrical float, extending nearly to the bottom of the water; or, for the uniform cylinder, may be substituted the two cylinders combined in one float, as shown by the dotted figure at A. If this form be adopted, the lower cylinder must lie wholly immersed, when the water is free from ebullition, and the smaller must be as much less in cross area as the depth of immersion is less than the depth of water, in order to counteract the effects of ebullition. The float which is adopted must be open at bottom, to admit steam; and tight at the top and sides. It is to be attached to a lever, A B, working vertically around a fixed axis at B, and carrying the slide D by means of the rod shown in the figure, which must be so attached to the lever as to allow a slight horizontal play at the point shown at the bottom of the rod. The water line being shown in its lowest admissible position, it will be seen that, if it descend lower, the orifice in the sliding piece at D will come into junction with the lower orifice C, and emit a puff of steam into the fire room; and the lower the water descends, the greater will the quantity of steam which is emitted become. But if so much water be injected as to raise the water line above the dotted line parallel to A B, the orifice D will come into junction with the upper orifice C, and steam will be emitted thence.

The subordinate fixtures and arrangements there is no necessity for explaining. I would only add, that every thing in this arrangement, of which I am the author, is at the service of every one who can use any part of it to advantage. I am, Sir, yours, respectfully,

ALEXANDER C. TWINING.

We annex the following plan, suggested by Mr. John S. Williams, of Cincinnati, Ohio:



The principle may be thus applied:—Place the water chamber (C) either against the boiler, or at a distance on a level with it. This chamber must have one valve (E) opened toward it from the supply water, and another (F) from it towards the boiler, on the principle of the seat of the common force pump. By an escapement, or three-way cock (D), placed in a small pipe (b) leading from a, the steam in the boiler, to the chamber the atmospheric and steam pressure may be alternated in the chamber, so as to allow the supply water first to flow into the c ber through E, and then from it through F to the boiler. No force is required, except to work the very small escapement in the alternation pipe; and never while the supply water in A, and operation is kept up, will the water in the boiler rise higher or sink lower than the line a, above the level of which the chamber shall have capacity equal to the waste during the operation. d is a float to prevent condensation.

Or the same result may be produced, by placing the chamber C something higher than above described. Let the water in the supply pipe, reservoir, or cold water pump, A, be kept higher than the chamber C, which is furnished with valves, E and F, as before. Let the entrance of the alternation pipe b, be exactly at the water line a in the boiler B. By means of the lever c, work the double puppet valve D up and down; or provide any means so as alternately to shut the steam and air out of the chamber C. This is all the power required. It is evident that if the water in the boiler should be lower than a, the chamber would pour in more than the water, and raise the water to a; but if the water should happen to be higher than a, no steam could pass through b to displace the water in C; and of course there would be no supply until the water would be evaporated down to a, where it would stand for ever, provided the supply water in A, and the opening and shutting of D, were continued. When the steam is down, the boiler might be filled through E and F.

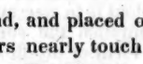
If the chamber C were placed in the common condenser, and subject to the action of the escape steam, the necessary supply of water, and ao more, would be heated.

One apparatus will supply any number of *connected* boilers; but should one be attached to each boiler, and the boilers unconnected, a boat might be ever so much, or ever so long listed, without a possibility of the water being more exhausted in one than in another; and no more sediment would be collected in one boiler than in another. If, in addition to this, were each boiler furnished with a valve in the steam pipe, opening toward the cylinder, the following benefits would be the result of the arrangement. A weak boiler or flue would not be subjected to the strain of an accidetal surcharge of steam in another. Should a surcharge happen in one boiler, it would occupy the whole safety valve for its relief. Should one boiler burst, or a flue in one collapse, the others would not be affected by it, and not a stroke of the engine would be lost, but the remaining boilers would continue to work the engine as if nothing had happened, unless the bed were deranged. Were one boiler to burst, that, and that only, would exert its power to destroy the boat and crew, and to derange the bed: whereas by the present system, the force of all is exerted by an accident in one. The above results might be obtained from one supplying apparatus, having a branch pipe with a valve F and stop cock, runing into each boiler, for its separate supply.

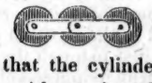
On increasing the Facilities for Transportation by Water. By JOHN N. POMEROY. To the Editor of the American Railroad Journal.

SIR,—Although my acquaintance with you is very limited, I hope you will pardon the liberty I take in addressing you. My profession necessarily occupies a great portion of my time and attention; nevertheless, I am not indifferent to the progress of improvements which are going on at such an astonishing rate in our country. The wonderful facilities for rapid transportation afforded by the introduction of railroads, and its vast superiority, in velocity at least, to the modes of transportation on the natural water communications throughout the country, could not but excite the inquiry—"Is it true, then, that the various rivers and arms of the sea, which intersect the face of the earth, and which have been heretofore considered as great highways for the convenience of man, and designed as such—is it true that the progress of improvement is to prove these but *obstacles*, rather than *facilities*?" The present superiority of the railroad system would seem to indicate an affirmative answer to this question; but a reflecting mind would be unwilling to admit it, and would be led to inquire into the *reason* of the apparent superiority, and would, at all events, be induced to doubt the wisdom of man, rather than his Maker. What, then, is the reason why we cannot pass with equal (or with greater) facility and velocity through the water, as on the railroad? It is doubtless, chiefly, if not wholly, on account of the *law of resistance* to motion in fluids: can that be obviated? I do not hesitate to say it can, and will be. How? This leads me to the object of this letter, which is to describe a plan which I have invented for that purpose, and as kyour opinion, and, through you, the opinion of practical men, of whom, I think, you must number many among your friends or acquaintances. It appears to me to obviate the difficulty above referred to; but is the plan *practicable*; or are there insuperable practicable objections to it? In order to give you an idea of the plan above mentioned, or machine, I may as well describe the one which I have made; first premising that the object is to have the *sustaining* part of the vessel the part which moves and *gives motion*. The machine which I have made is composed, first, of 25 tin cylinders, 8 inches long, 2 inches in

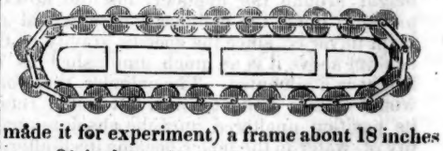
diameter, with caps at each end, water-tight, and a pivot also in each end, in the centre of the cap or head, say a half inch in length. These cylinders are connected together by a chain, composed of narrow strips of tin, having



holes at each end, and placed on the pivots, so that the cylinders nearly touch each other, not



quite; and so that the cylinders can revolve on the pivots without interfering. These cylinders, thus connected at each end, are made to enclose the *hull*, or boat, which is (as I have



made it for experiment) a frame about 18 inches long, 8¼ inches wide, and 4 inches in height or thickness, and so turned at each end as to admit an easy path for the cylinders, and also so that the cylinders may strike the water in a proper direction. There is a flauge on the exterior edge, or circumference of the frame, to prevent the cylinders from rolling off. It will now be perceived, I think, that a force exerted on the pivots in the same direction, on any one or more of the cylinders, that it will give motion to the whole, and when placed in the water, the machine, sustained by the buoyancy of the cylinders, must move as fast *ahead* as the cylinders pass through the water to the *stern*. This power in my machine is applied to the pivots of the cylinders by two wheels, on a shaft, which passes transversly through the machine, and plays on gudgeons at each end—

the wheels adapted by cogs to act on the pivots, and the shaft turned by a spring.

Now, what are the practical objections to the above? I admit the first impression must be unfavorable—it is, as a water-craft, entirely *unique*; but, appearances aside, it may be said that a vessel on this construction cannot be made sufficiently strong to sustain itself in rough water without being too heavy to derive the benefit proposed from the cylinders. It appears to me that the form of the *hull* is well adapted for strength, without much weight. As to the cylinders, it is more doubtful. I have supposed a vessel made of about 100 feet in length, and 30 feet broad, 10 feet high between the two floors, having 60 cylinders or barrels, each 30 feet long, 5 feet in diameter, and having 25 barrels, say, in the water, which would be about the number. Now, 25 of these barrels, *entirely* immersed, would sustain 450 tons; and it appears to me that a vessel *complete* of this construction and size might be made considerably within the limits; and it is to be borne in mind, that, from its mode of progression, it would not conflict with rough water, as ordinary vessels do, as the impinging cylinders would rather '*nullify*' than make war with the opposing element. Would it not be *top-heavy*, and careen? I see no objection to its being made sufficiently broad to avoid this difficulty. Would it not be incommodious? I should judge not, but the reverse, as the rooms might be made square, high, and with sufficient windows at the sides; and I see no objection to having *guards*, a deck fore and aft the cylinders, and a promenade deck over the cylinders. Would it require more power to produce a given velocity than ordinary steamboats? I think very far less; but the cylinders, which are in the water, would be much impeded in their revolutions (which must be rapid) by the water. If this be a difficulty, it may be avoided by wheels on the pivots, or gudgeons of the cylinders, which should sustain the cylinders and revolve on their axes, leaving the cylinders to pass the water without revolving.

I do not flatter myself that I have nullified all objections which may be raised to the practicability of the above plan. What I have said is by way of suggestion; and having had the subject on my mind for two or three years, I am anxious to relieve myself, by getting the opinion of experimental and scientific mechanics, as to its practicability and probable utility. The same principle, I am inclined to think, may be applied to railroad cars with many advantages.

Very respectfully, yours, &c.

JOHN N. POMEROY.

Report of WALTER GWYNN, ESQ., *Engineer, to the President and Directors of the Portsmouth and Roanoke Railroad Company.*

[Continued from page 24.]

The difficulties to be overcome having been adverted to, and the plan of the work described, I have next to submit to you the probable cost of the railroad.

The gradation on division 1, from Portsmouth to Suffolk, is finished, a portion of the road has been laid, and nearly all of the timbers delivered. It is contemplated to complete it in the course of the winter, or very early in the spring. On this section of the road, the Dismal Swamp is encountered and successfully crossed; large ditches were dug, which sufficiently drained and furnished materials for the substratum of the road-bed, and this covered with sand to the depth of a foot or more, formed at once a durable and unyielding foundation for the superstructure. Capt. Crozet's estimate of $90,563, for this portion of the work, will prove more than adequate; the cost will not exceed $75,000; which will be for

DIVISION I.—From Portsmouth to Suffolk—17 miles.

At $4411 76 per mile,	$75,000

DIVISION II.—From Main Street, in Suffolk, to Station 290—10 miles.

Excavation—108,923 cubic yards, at 9½ cents per yard,		$10,347 68
Embankment—128,213	" at 10 cents,	12,821 30
Four Stone Drains,		1,000
Abutment at Smith's Branch, including Bridge,		4,200
Six Truss Bridges,		600
One hundred and sixty tons iron, at $45 per ton,		7,200
Six Tons of Spikes, at $198 per ton,		1,188
Splicing Plates, at $15 per mile,		150
105,600 lineal ft. heart pine Rails, $50 p. 1,000 ft,		5,280
10,560 Sills, at 50 cents per Sill,		5,280
21,120 Oak Wedges, at 3½ cents per wedge,		739 20
Carpenter's work, Horse-path, &c., $704 per mile,		7,040
	Total,	$55,846 18

DIVISION III.—From Station 290 to Station 525, on the West bank of the Blackwater—9 miles.

Excavation—90,849 cubic yards, 9 cents p. yd.		$8,176 41
Embankment—82,358	" 10½ "	8,647 59
20 Truss Bridges,		1,500
Stone abutments, Pier & Bridge across Blackwater		9,500
144 Tons of Iron, at $45 per ton,		6,480
Spikes, at $118 80 per M.,		1,069 20
Splicing Plates, at $15 per mile,		135
95,040 lineal ft. heart pine Rails, $47 per 1,000 ft.		4,466 88
9,504 Sills, at 40 cents,		3,801 60
19,008 Wedges, at 3½ cents,		665 28
Carpenters' work, Horse-path, &c., $704 p. mile,		6,336
	Total,	$50,777 96

DIVISION IV.—From the Blackwater to Station 672, on the West bank of the Nottoway—5 miles, 2275 feet.

Excavation—12,375 cubic yards, 9 cents p. yard,		$1,113 75
Embankment—60,735	" 10½ "	6,377 17
Stone abutments, Pier & Bridge over Nottoway,		11,100
87 Tons Iron, $45 per ton,		3,915
Spikes, at $118 80 cents, per mile,		645 08
Splicing plates, $15	"	81 45
57,350 lineal feet heart pine Rails, $47		2695 45
5,735 Sills, at 37 cents,		2121 95
11,468 Wedges, at 3½ cents,		401 38
Carpenters' work, Horse-path, &c., $704 per mile,		3823 20
	Total,	$32,274 43

DIVISION V.—From the Nottoway to Cypress Bridge Road—4 miles, 1665 feet.

Excavation—16,931 cubic yards, at 9 cents,		$4,223 79
Embankment—45,202	" 10 "	4,520 20
69 Tons of Iron, at $45 per ton,		3,105
Spikes, at $118 80 per mile,		512 02
Splicing plates at $15 "		64 65
45,550 lineal ft. heart pine Rails, $47 p. 1,000 ft.		2,140 85
4,555 Sills, at 40 cents,		1,822
9,110 Wedges, at 3½ cents,		318 85
Carpenters' work, Horse-path, &c., $704 per mile,		3,034 24
	Total,	$19,741 60

DIVISION VI.—From Cypress Bridge Road to Buck-Horn Run—9 miles, 3000 feet.

Excavation—99,069 cubic yds. 9½ cts. p. yd.		$9,126 55
Embankment—92,516	" 10 "	9,251 60
153 Tons of Iron, at $45 per ton,		6,885
Spikes, at $118 80 per M.,		1,135 72
Splicing plates, at $15,		143 40
110,040 lineal ft. heart pine rails, $47 p. 1000 ft.,		4,718 88
10,104 Sills, at 40 cents,		4,041 60
20,208 Wedges, at 3½ cents,		707 28
Carpenters' Work, Horse-path, &c. $704 p. mile,		6,730 24
	Total,	$42,770 27

DIVISION VII.—From Buckhorn Run to Station 1,146, on the West bank of the Meherrin—4 miles, 70 feet.

Excavation—12,411 cubic yards, at 9 cents,		$1,116 99
Embankment—46,143	" 10 cents,	4,614 30
Stone abutments, Bridge and Pier across the Meherrin,		14,500
Truss Bridge across Buckhorn Run,		120
64 Tons of Iron, at $45 per ton,		2,880
Spikes, at $118 80 per M.,		476 73
Splicing plates, at $15,		60
42,380 lineal ft. heart pine Rails, at $47 per 1000,		1,991 86
4,238 Sills, at 40 cents,		1,695 20
8,476 Wedges, at 3½ cents,		296 66
Carpenters' Work, Horse-path, &c., $704 p. mile,		2,816
	Total,	$30,567 74

DIVISION VIII.—From the Meherrin to Station 1288—5 miles, 1570 feet.

Excavation—77,447 cubic yards, at 9 cents,		$6,970 23
Embankment—113,927 cubic yards, at 10 cents,		11,392 70
Truss Bridges,		500
86 Tons of Iron, at $45 per ton,		3,870
Spikes, at $118 80 per M.,		633 60
Splicing plates, at $15,		80
55,940 lineal ft. heart pine Rails, at $45 p. 1000 ft.,		2,517 30
5,594 Sills, at 40 cents,		2,237 60
11,188 Wedges, at 3½ cents,		391 58
Carpenters' Work, Horse-path, &c., $704 p. mile,		3,754 66
	Total,	$32,347 67

DIVISION IX.—From Station 1288 to Station 1406, on the Summit—4 miles, 2450 feet.

Excavation—67,531 cubic yds., at 9 cents per yd.		$6,077 79
Embankment—56,768	" at 10 "	5,676 80
71 Tons of Iron, at $45 per ton,		3,195
Spikes, at $118 80 per M.,		529 84
Splicing Plates, at $15,		66 90
7,140 lineal ft. heart pine Rails, $45 per 1000 ft.,		2,121 30
7,714 Sills, at 40 cents,		1,885 60
9,428 Wedges, at 3½,		329 98
Carpenters' Work, Horse-path, &c., $704 p. mile,		3,139 84
	Total,	$23,023 05

DIVISION X.—From the Summit to the Roanoke—7 miles, 4,700 feet.

Excavation—11,460 cubic yards, at 9 cents,		$9,941 40
Embankment—117,978	" at 10 cents,	11,797 80
Truss Bridges and Stone Drains,		1,100
126 Tons of Iron, at $45 per ton,		5,670
Spikes, $118 80 per mile,		937 33
Splicing plates, $15 "		118 35
83,320 lineal feet heart pine Rails, $45 per 1000 ft.,		3,749 40
8,332 Sills, at 40 cents,		3,332 80
16,664 Wedges, at 3½ cents,		583 24
Carpenters' Work, Horse-path, &c., $704 p. mile,		5,554 66
	Total,	$42,784 88

Summary of the estimates of Excavation, Embankment, Bridges and Superstructure.

Division I.	17 miles.			$75,000 00
" II.	10 "			55,846 18
" III.	9 "			50,777 96
" IV.	5 "	2275 feet,		32,274 43
" V.	4 "	1655 "		19,741 60
" VI.	9 "	3000 "		42,770 27
" VII.	4 "	70 "		30,567 74
" VIII.	5 "	1570 "		32,347 67
" IX.	4 "	2450 "		23,023 05
" X.	7 "	4700 "		42,784 88
	59 "	5160 "		$405,138 78

Add for contingencies, superintendence, land damages, the extension of the Road to the wharves in Portsmouth, warehouses, shops, water-stations, passing places, &c. $69,866 22

Total amount, $475,000 00

The foregoing aggregate amount, it is believed, embraces every item of expenditure that is likely to occur. The increased demand for labor, which may be occasioned by the commencement of the James River and Kanawha Improvement, and other works contemplated in Virginia and North Carolina, is the only contingency that can affect the cost of this road. This I have endeavored to provide for, by estimating the amount of work as exhibited on the profile; notwithstanding I am confident that the line is susceptible of modifications, by which the amount of excavation and embankment may be materially lessened, and the grade and direction at the same time considerably improved.

I am unable, at this time, to form any correct estimate of the revenue likely to be derived as a return for the capital expended. It may, however, be expected, that I should offer a few general remarks on a subject of so much importance. The direct communication which this railway, in connection with the Chesapeake Bay, and the French Town and Newcastle railroad, offers between the northern and southern cities, the speed, comfort, and perfect safety, with which passengers can be conveyed through this route, must certainly secure to this company a considerable revenue. The favorable point selected for the termination of this road on the Roanoke—the probable prolongation of a railroad from Weldon, southwardly, by the enterprizing citizens of North Carolina—the certainty that to Weldon, as a place of deposite, the heavy and profitable products of that country, and of the valley of the Roanoke, must go—thence, most probably finding their way on your railroad to Norfolk, justify the most sanguine calculations of considerable and lasting revenue to your Company.

The importance of this communication to the whole district of country through which it passes, and especially to Norfolk and Portsmouth, is too well known and appreciated to be dwelt on here.

I have the honor to be, gentlemen, very respectfully, your obedient servant,

WALTER GWYNN, Engineer.

The stock of the Liverpool and Manchester Railroad Company sold in London on the 19th of November at £190 per share, £100 original cost.

The Stanhope and Tyne Railroad Company are proceeding rapidly in the formation of their line of way from Stanhope to South Shields. They have engaged to perfect their splendid undertaking by forming branches from below Bolden to Monkwearmouth and Heworth; the latter will join the intended continuation of the Carlisle Railway, affording a communication between Carlisle, Stanhope, the Hartlepool Railway, Monkwearmouth, Gateshead, and South Shields.—[Tyne Mercury.]

[*From the Mechanics' Magazine.*]

State of Manufactures in America—Evidence of Mr. James Kempson, of Philadelphia, Cotton Manufacturer. [From the Factory Commissioners' Report in Great Britain.]

Most of our readers, doubtless, have heard of the struggle that has been going on between capitalists in England and the friends of amelioration of the condition of the working classes in that country, particularly of those who have not arrived at maturity, and are in fact in a much worse condition than most slaves in any part of the world. The philanthropists succeeded so far as to obtain a parliamentary commission of inquiry, which was followed up by the introduction of a bill into the House of Commons, regulating the hours of work in factories for all boys and girls under fourteen years of age, we believe. That bill passed the House of Commons, but the *House of Incurables*, (the Lords,) as they have been so well termed, thought fit to reject it.

In the course of the investigation, Mr. Kempson, of Philadelphia, was examined, and his testimony we now insert, and we are sure it will be perused with feelings of pride by all our readers.

With what extent of manufactures have you been conversant in America?—I have been acquainted with the manner of conducting manufactures in most of the manufacturing states.

What number of workmen do you employ in your manufactory?—About four hundred.

What is the lowest age of persons in your employment? None under nine.

Have you many about nine years of age?—We have a great many between nine and twelve. About one-fifteenth of the persons employed in the United States are under twelve years of age.

What is the utmost extent of your daily working hours?—The actual number of working hours averages throughout the year twelve hours of actual work; at some seasons it is nearly fourteen, and at others it is little more than ten.

Is the labor for fourteen hours often continuous for many successive days?—We change the period by the light. We never light up in the mornings, nor in the evenings, from the 20th of March to the 20th of September; and from the 20th of September to the 20th of March following, we work until eight o'clock of the evening.

Do the children work during the whole hours of work?—Yes; we never make any difference on account of age.

Have any complaints been made in the United States as to the propriety of such extent of labor for children?—There have been newspaper complaints, originating probably from the workmen who came from this country to the United States; but among our workmen there is no desire to have the hours of labor shortened, since they see that it will necessarily be accompanied by a reduction of their wages.

What proportion of the persons employed are natives of the United States?—Throughout New-England, which are considered the manufacturing states, above eight-tenths of the persons employed are natives of the United States.

Are many of the remaining two-tenths English workmen?—The greater portion of them; but, as a general rule, they do not like to take English workmen in the New-England factories.

Why do they not like the English workmen?—Because they are so dissipated and so discontented.

Is this their general character in the United States?—Yes; after they have been some time in the country, they are noted as the greatest drunkards we have. The wholesale price of whiskey is, with us, nine pence per gallon, and they appear not to be able to overcome the temptation. Our own workmen are *better educated, and more intelligent, and more moral, and refrain more from sensual indulgence.*

How does the discontent of the English workmen, of which you have spoken, usually manifest itself?—In the workmen becoming masters, in strikes, and demands for wages, almost always ill-considered, with which the master cannot comply, and which grievously interfere with his commercial operations; their ignorant expectations generate ill will and hostility towards the masters.

Are no jealousies entertained by the American workmen towards their masters?—In America we never hear the word master; they usually speak of the manufacturer by name, or as their employer, and view him rather as a tradesman to whom they dispose of their labor, than as a person having a hostile interest. There are no jealousies between American masters and workmen, of the nature of those which appear to prevail between the English workmen and their employers.

Are there no combinations to keep up wages in America?—None amongst the American cotton manufacturers.

Are there no combination laws?—None.

To what do you attribute this state of things among the American workmen?—To their superior education, to their moral instruction, and to their temperate habits.

Have you any national system of education?—We have public schools, supported partly by state funds, and partly by bequests. All children have the privilege of attending.

Do they, in point of fact, very generally attend in the manufacturing states?—They universally attend; and I think that information is more universally diffused through the villages and the whole community of the New-England states, than amongst any other community of which I have any knowledge.

What is the general view taken of these schools by the manufacturers and persons of wealth in America?—From their experience they deem them of the greatest importance to the welfare of the state. They are encouraged by the state governments and all the leading persons of the state.

How do the children whom they employ obtain education?—The manufacturers are always anxious that the children should absent themselves from the manufactory during two or three months of the year to attend the schools. The manufacturer very frequently suggests to the parents the necessity of the children being taken to school. The sending the child to school is generally an inconvenience to the manufacturer.

Is the inconvenience of the children going to school such as to increase the cost of production?—I do not think it does increase the cost of production. The only inconvenience is in the trouble of getting other hands. We think the advantage of their being educated more than counterbalances that trouble.

What is the nature of this national education?—It consists in reading, writing, arithmetic, grammar, and geography.

Do the workmen read much?—Yes; we have frequently a difficulty in keeping books out of the hands of some of them when they should be engaged in their work.

What sort of books do they usually read?—Voyages and travels are the most favorite reading with them. They are also great readers of newspapers, and some of the workmen take two or three.

Then what is the cost of each newspaper?—Less than 2d.

What wages do you usually give?—We employ them by the year. A person ten years old would get 3s. a week; a person twelve years old, 4s. a week; fourteen years, 5s.; sixteen, 6s.; eighteen, 8s. Those more advanced in years would earn 10s. The smaller children in the carding room are those who earn 3s. a week; those attending the drawing frames earn from 5s. to 6s.; those who attend the roving frames earn 8s. a week; girls attending the throstle-frames earn from 5s. to 8s.; machine makers earn about 5s. a day; mule spinners earn about 5s. a day; overlookers earn from 5s. to 6s. a day; assistant overlookers from 3s. to 4s. a day.

What do the men pay for board when they board with families?—From 6s. to 7s. per week.

What do young women pay?—Five shillings per week.

And children?—They generally board with their parents.

What is the description of fare usually obtained by the American workmen?—Nearly the same articles as those used by the more wealthy classes. They have as much meat as they wish twice a day; they have fruit pies at every meal; in short, as I have stated before a committee of the House of Commons, I have paid eight shillings a week for board, lodging, and washing, and live as well as I could live in equal lodgings in a village in England for two pounds a week.

What is the difference in the effects between fourteen and ten hours' work on the health of the persons employed, so far as you have observed in America?—When they worked twelve hours, the thermometer stood at 103°, and they were then more unhealthy than when they were working twelve hours in the winter season; but I believe that those who were in the mill enjoyed better health, both during summer and winter, than those who worked at agricultural employments, or than those who were idle. I state this from my own observation. I resided at the house of a medical practitioner, who had the practice of most of the persons who were employed at the mill, as well as of most of those who were employed in agriculture, and my own observation was corroborated by his reports, as to the sickness prevalent. Thus I received my impression of the superior healthiness of those engaged in the factory.

Are the American children stronger or weaker than the children of the English operatives?—The youngest American children are, I think, rather the strongest. Since No-

vember last I have been engaged in visiting the manufactories here, and I should say, that, on the whole, the children are rather stronger in America than they are here.

Would you call the English manufacturing children, as a body, unhealthy?—No; I should almost think they are as healthy as the children in the agricultural districts. I have noticed that the children of a factory in a village usually look better than the children of a factory in a town. I should think this might be accounted for from the difference of the residences in the villages as compared with the residences in the towns, where they appear to work longer hours.

Does your experience in America of the short as compared with the long hours, enable you to form any judgment as to the probable effects upon the health or comforts of the workmen of a reduction of the working hours to ten in this country?—The climate is so different that I can form no judgment. The longest hours of our work are during periods of the most oppressive heat.

Do the children attend school at any particular period?—No; they attend during one period as much as another.

Do they select the times of the long or of the short hours?—I do not think they make any selection as to the hours of work. If they selected the time of the long hours they would have the night-work of the winter. They would, I think, as soon have the longer hours of the summer to avoid night-work.

What is the nature of your manufacture?—Spinning and weaving coarse yarn.

Is any of it for exportation?—Yes.

To what markets?—South America, West and East Indian markets.

Do you find that you can compete successfully with British manufactures of a similar kind in the same markets?—Yes; although we labor under some disadvantages that you do not.

What disadvantages?—One of our disadvantages is, that in the East India markets we have to pay a duty which you do not pay; and we have to pay six per cent. interest on the advance, which is considerably higher than you have to pay. A further disadvantage we labor under is, that whereas a large proportion of your manufacturers export their goods direct, and are therefore not subject to any commission on the shipment, our manufacturers never export on their own account, and the shipping merchant starts with a commission of five per cent. on the price which the manufacturer receives.

Have the goodness to explain the nature of the charge of five per cent. commission to which the article is subject prior to shipment?—The manufacturer sends his goods to a commission merchant at the shipping ports, who receives five per cent. for selling and guaranteeing.

And notwithstanding these drawbacks you can maintain the competition with us?—Yes; and not so only, but are gaining ground upon you, and have already excluded you from some markets.

From what markets?—Some of the Mexican and South American. Several of our largest establishments have large contracts pending for a long time forward for those markets, at prices which would not give a fair return to the British manufacturer, but are very profitable to our manufacturers.

You say this from having ascertained, during your visit to Manchester and other manufacturing districts in this country, the exact state of the relative prices?—Yes.

What are the present relative prices of yarn,—for instance, of No. 16?—No. 16, water twist, made entirely of good cotton, sells in the United States at 10½d. per lb.; in England, No. 16, yarn, made from a mixture of waste twists, and a small quantity of boweds, sells at 11d. per lb. The price of 10½d. in America is from the commission merchant, who receives 5 per cent. for selling it on eight months' credit; and the price of 11d. in England is on three months' credit from a manufacturer.

Do you consider the price of 10½d. to be remunerative to the American manufacturer?—Decidedly so.

And do you consider that you have equal advantages in weaving?—Yes.

Have you the means of showing what is the comparative cost of weaving in the United States and in this country?—Yes, I can show it by the following statement:

	United States.		England.
Interest on dressing machine,	£2 11		£1 12
Do. twelve power looms,	8 6	6 per cent.	4 10
Cost per annum of one horse power,	3 10		12 10, at 5 per cent.
Cost of dressing 3,756 pieces,	23 9		46 18
Cost of weaving,	125 4		156 10
American, 10½d. per piece,	£163 0		England, 11d. £222 0

How do you account for the difference between £3 10s., which you state as the cost per annum of one horse power, and £12 10s. as the cost in England?—In America it is water power, which exists there in great abundance, at a very low rent, even in the bes situations; whereas in this country it is mostly steam power, or, if water power, at a very high rent.

What do you reckon will be the effect on the cost of production of your manufacture, if the working hours of your mills were, by an act of your legislature, to be reduced from an average of 12 to 10 hours?—They would be increased in price about ten per cent.

Have you the means of showing how the reduced hours of work would operate on the cost of production?—Yes, by the following statement:

Estimated value of the cotton manufacture of the United States—Wages, £2,087,400; cotton, £1,800,000; profit and interest, £1,529,266; annual value, £5,416,666. Now, supposing a legislative enactment to limit the working hours to ten, and in consequence of foreign competition the value of the goods must not be increased, and in order to make the same quantity he must employ one sixth more hands, and the interest on this increased investment must be deducted from the wages, for no other item can be reduced; taking the interest, wear and tear, at 8 per cent. upon this further investment, the amount will be £112,819.

£2,087,400 wages, as before
112,819

£1,974,581 wages after.

The number employed previous to this supposed alteration was 62,157, receiving upon an average annually £33 10s. The number increased to 72,572 would receive £27 4s. Supposing the workmen not reduced in their wages, the amount would stand: Wages, £2,429,998; interest on the investment, £112,819; cotton, £1,800,000; interest and profit, £1,529,266; total, £5,872,073.

What, in your opinion, would be the effect of a compulsory limitation of the working hours in this country to ten instead of twelve, upon the manufactures of the United States?—It would tend much to their increase. I think we should not only be able to undersell you in markets abroad, but even in your home market.

Do you mean after paying the present import duty into this country of ten per cent?—Yes.

Do you not think that we should be under the necessity, in such a case, of adopting your tariff system?—Most undoubtedly, if you wished to preserve even your home market.

Advice on the Care and Management of Tools.—From a new edition of the Cabinet Maker's Guide, we quote the following:

"The goodness of saws, chisels, and other edge tools, depends upon the quality of the steel, which should be uniform throughout, and it is always better to have them tempered too hard than too soft, for use will reduce the temper. If at any time you wish to restore the temper, and to perform the operation yourself, the best method is to melt a sufficient quantity of lead to immerse the cutting part of the tool. Having previously brightened its surface, then plunge it into the melted lead for a few minutes, till it gets sufficiently hot to melt a candle, with which rub its surface; then plunge it in again and keep it there until the steel assumes a straw color, (but be careful not to let it turn blue,) when that is the case take it out, rub it again with the tallow, and let it cool; if it should be too soft, wipe the grease off and repeat the process without the tallow, and when sufficiently hot, plunge it into cold spring water or water and vinegar mixed.

"By a proper attention to these directions, and a little practice, every workman will have it in his power to give a proper temper to the tools he may use.

"If a saw is too hard, it may be tempered by the same means; if you are near a plumber's shop, you may repeat the process conveniently and without expense, when they are melting a pot of lead.

"In other cutting tools you must wait till the steel just begins to turn blue, which is a temper that will give it more elasticity, and at the same time sufficient hardness."

Centre of Gravity of a Ship.—A discovery, which is likely to be attended with important results to the navy, has recently been made by Commander John Pearce, R. N., of Plymouth. This officer, from various circumstances, was led to doubt that the *centre of gravity of a ship* was the *axis of rotation*, as hitherto imagined, and that this was the cause of so many errors occurring in masting. He accordingly proceeded to ascertain the truth of his doubts, by experiments on different models, which he has continued for upwards of twelve months, and the result, we understand, cannot fail to render the science of ship-building more comprehensive and demonstrative, as well as lead to the cor-

rection of other errors in the theory equally worthy of consideration! The axis of rotation has been fixed, by Capt. Pearce's experiment, at some distance above the gravity of the ship, and in the point which is known by the name of the lacentre; and we understand he considers the complexity of the theory, and not having considered the subject in a sufficiently practical shape, to have led authors into the error of confounding the centre of gravity of the ship with the axis of rotation; and that this has led to the error of supposing the lateral effort of the water, or resistance to leeway, to produce effects contrary to truth, and from which proceeds the present imperfect system of masting. In fact, the discovery of the true axis of rotation will be a complete key to the improvement of naval architecture, as *all the forces*, which are so constantly and variously acting, are estimated by the distances from the axis of rotation to the points where they are applied.—[London paper.]

AGRICULTURAL.

Selected from the N Y. Farmer and Gardener's Magazine.

Economy of Cutting Hay for Horses—Improved Straw and Hay Cutting Machine. By the EDITOR.

It is stated in the publications of Great Britain, that the economy of using cut hay and straw has been fully and generally tested, particularly by stage proprietors, who, in consequence of the powerful competition from steamboats, were driven to contrive ways and means to lessen the expenses of keeping their horses, without diminishing their efficiency. They accomplished their objects in the substitution of cut hay for long hay. Similar circumstances have compelled the owners of stage horses in this country to adopt the same course.

Mr. Reeside, one of the largest mail contractors in the United States, has, we are informed, adopted the plan with very great saving in expense, and with much additional performance by his horses. It was the admirable condition of his stage horses that led the superintendent of the streets of this city, J. M. Bloodgood, Esq. to make inquiries, and to adopt a similar course of keeping the horses belonging to the corporation of New-York. On application to Mr. B. we were politely furnished with the following particulars:

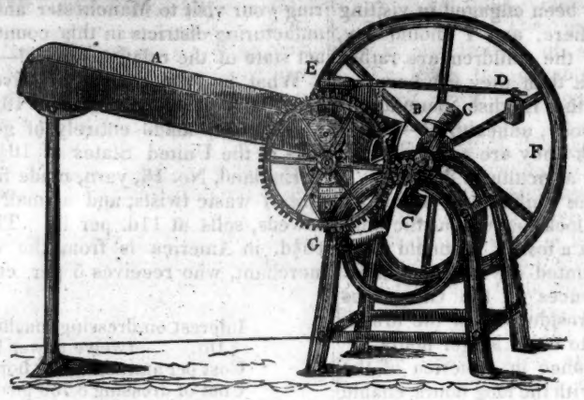
The number of horses employed in carting street manure is generally twenty, and sometimes one or two more, or less.

In six months of 1831, when the hay was not cut, the following quantities were bought for their consumption:

January, 4,480 pounds; February, 10,304; March, 2,240; April, 15,680; May, 6,200; June, 5,000. Total, 43,904 pounds.

In six months of 1833—January, 4,000 pounds; February, 5,000; March, 5,300; April, 2,000; May, 7,000; June, 5,000. Total, 28,300 pounds.

One bushel of cut hay is given three times a day, with 4 quarts of ship stuff, and 2 quarts of Indian meal, at each feeding. Oats are sometimes given once a day instead of the hay and meal. Under this feeding, which may be considered pretty high, the horses, though they labor hard, are kept in much better condition than when long hay and oats were given. The present plan of feeding is considered to be a saving in expense at least one third.



One reason why the horses, on this system of feeding, are much more invigorated and in finer order, is that they are not obliged to labor all night in eating dry hay, but have time to obtain rest and sleep.

One thing is pretty evident—the time will soon come when cut straw and hay, packed in bags, &c. will be brought to this city from the "far west.

The cutting machine used at the corporation stables is that made by Mr. Johnson, of this city. The following drawing, which we take from the Edinburgh Quarterly Journal of Agriculture, is described as an improvement on that made by Mr. Johnson.

Some years ago, the straw or hay cutter took a new form, under the hands of a person who seems to have taken out a patent for the improvement. In this, the cutters are made to revolve, by being fixed upon a skeleton cylinder on the fly wheel shaft, the hay being brought forward by a pair of feeding-rollers, as had been, done on some former occasions; but in this case, the progressive motion of the hay was constant, which enabled the inventor to dispense with the machinery required for producing the intermitting progress of the hay. Immediately on passing through the feeding-rollers, the hay is protruded through a cutting-box, the face of which is worked off to an interior cylindrical surface. The cutters, which may be of any number from one to four or more, are placed diagonally upon the skeleton cylinder. The diagonal position is considered necessary for the cutters, as they thereby pass through the hay with an oblique cut, producing an effect resembling that of shears, and which prevents the shock that would attend the stroke of the cutters if the whole length of its edge were to come in contact with the hay at the same instant.

From experience, however, it is now found that the oblique position of the cutters is attended with considerable inconvenience to the workmen, arising from the difficulty of setting the cutters when they have been removed for sharpening, or for any other purpose. The difficulty attending this operation may be easily conceived, when we consider that the edge of the cutters, when in proper adjustment, must form part of the sections of a cylinder, or of an elliptic curve; and hence the difficulty of its adjustment, with sufficient accuracy to insure good performance; for, unless the edge of the cutter come into all but actual contact with the lower edge of the cutting-box, the lower stratum of hay will be left uncut.

The defective position of the cutters in the hay-cutting machine having been suggested to Mr. Slight, of the firm of Messrs. Slight and Lillie, engineers, and modeland machine makers to the Highland Society of Scotland, he has rectified the defect, and has produced a machine possessing the property of having the edge of the cutters parallel to the axis of the fly-wheel on which they are mounted; and in order to retain the advantages of an oblique passage through the body of hay, the cutting-box is elongated into a nozzle, which is twisted until the mouth of it assumes an angle of about 30°. The face of the nozzle is worked off as in former machines to an interior segment of a cylinder, concentric with the shaft of the fly-wheel. By this arrangement, which is just reversing the former position of the cutting parts, the entire efficiency of the machine is retained, while its construction is simplified, the price proportionally reduced, and the keeping it in order also rendered much simpler.

The annexed cut exhibits one of these improved machines, as manufactured by Messrs. Slight and Lillie, with the framing made entirely of cast iron. A is the feeding-trough, the rollers being only partially seen. B is the nozzle or cutting-box. C C, the cutter-bearers, with the cutters attached by their bolts. D is a lever and weight, which, through the medium of the bridge E, keeps a constant pressure on the feeding-rollers, to counteract any inequality of feeding. F is the fly-wheel for equalizing the motion; and G, the handle to which the power is applied. The small pinion on the fly-wheel shaft gives motion to the spur-wheel, which is mounted on the shaft of the lower feeding-roller, and carries also the lower feeding-pinion. This last pinion works into the pinion of the upper roller, and both being furnished with very long teeth, they thereby admit of a limited range of distance between the rollers, according to the quantity of feed.

With one of these machines, a man, assisted by a boy to feed in the hay or straw, can cut at the rate of eight stones per hour; and that quantity of cut hay is found to be sufficient for sixteen horses for twenty-four hours.

The machine, of which the above is a figure and description, combines, in an eminent degree, expedition and efficiency, with ease to the workman. We do not think it can be made of a simpler construction.

Cultivation of Peach Trees. By R. H. B.

[For the New-York Farmer.]

Peach trees may be preserved, by good management, twenty, and probably forty or fifty years. They are destroyed from north latitude forty to thirty-six degrees, by a worm which feeds on the inner bark of the tree, at its root. This worm is said to be the offspring of a fly of the wasp kind, which deposits its eggs in the bark of the root of the tree while it is young and tender. The remedy consists in searching for the openings in the bark at the root, and taking them out. If this operation is repeated three or four springs, the worm never after can make a lodgement there. The bark of the tree by this time becomes so hard, that the fly cannot make the puncture, in order to deposit the egg, or if deposited it perishes. After the worm is cut out in the spring, draw the earth up around the

body six or eight inches above the other ground.

Of all the fruit trees produced in this climate, none bears pruning so freely as the peach; indeed, it should be treated very much as the vine is. All those branches which have borne fruit should be cut out, if there is young wood to supply their places. Proof—take a limb which has borne two or three crops of fruit, and notice its produce; take another on the same tree, which has never borne at all, and the fruit on this last will be twice the size of the former, fairer, and less liable to rot. In pruning, the branches should be taken or cut out of the middle of the tree: thus giving more air and sun to the fruit on the outer limbs.

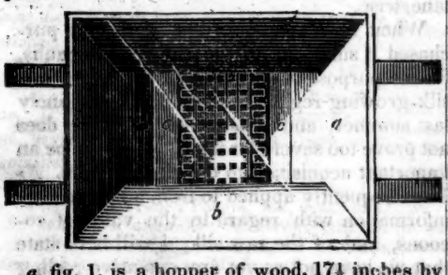
The peach tree produces best fruit when the ground is not stirred about it while the fruit is on. When it has no fruit, it should be cultivated as carefully as a cabbage, or any other plant.

The above comprises the most important points in the rearing of peach trees, and good fruit; if attended to, I have never known them to fail,—and my experience has not been very limited.

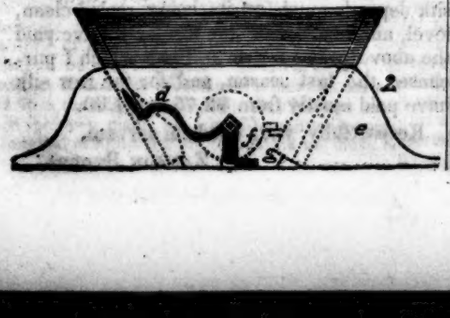
I repeat what may, perhaps, be doubted, that the peach tree, if the worm is kept out of the root, will live, at least, twenty years; and that this may certainly be done by attacking them the first year of its growth, and continuing to extract them for three or four years in succession, not forgetting to draw the earth up as directed. Straw, chips, or trash of any kind, serve the purpose just as well.

Very respectfully, yours, &c. R. H. B.
Washington City, Nov. 26, 1833.

CURD-BREAKER FOR SKIM MILK CHEESE.—We have heard of many curious experiments adopted by housewives, and some of them highly ludicrous, to facilitate the breaking of curd. This simple instrument is a happy substitute for every sort of expedient. With it any boy or girl can break the curd arising from the milk of eight or ten cows in fifteen minutes. It is not intended for the making of sweet milk cheeses, the curd of which should be broken very gently. It was invented by Mr. Robert Barlas, Gilmour Place, Edinburgh, and has been in use on some farms for several years past.



a, fig. 1, is a hopper of wood, 17½ inches by 14 on the top, and 10 inches in depth. *b* is a cylinder of hard wood 6¾ inches in length, and 3½ in diameter. It is studded with hard wood square pegs of a quarter of an inch in the side, cut square at the ends, and projecting three-eighths of an inch. There are eight teeth in the length, and fifteen in the circumference, of the cylinder, 120 teeth in all. It revolves on a round iron axle 12 inches in length, and is moved by the crank-handle *d* in fig. 2; *c c* are



two wedge-shaped pieces of hard wood, made to fill up in some degree the space between the side of the hopper and the cylinder. These pieces rest on a slip of wood nailed to the lower rim of the hopper, to keep them in their place. The face of these is studded with nine teeth of hard wood, similar to those on the cylinder, in a horizontal position, but so placed as to embrace those of the cylinder at opposite sides. The stand *e*, fig. 2, can be made of any length, to suit the breadth of the tub into which the curd is broken. The implement is used in this manner: place it over a tub, heap the hopper *a* with curd, and turn the winch *d* in either direction, and the curd will fall quite small broken into the tub. While one hand is moving the machine, the other can press the curd gently down into the hopper. As cleanliness is a matter of the greatest importance in cheese-making, the internal parts of this machine being loosely put together, can easily be taken to pieces to clean. The cylinder axle rests on two hard wood plumber-blocks, *f*, fig. 2, one on each side, which slip out of their groove. They are held in their working position by the thumb-catch *g*, sunk flush with the bottom of the stand *e*, one over each plumber-block. The wedge-shaped pieces *c c*, fig. 1, come out. To prevent the curd working out of the sides of the axle, the cylinder is set a little at both ends into the sides of the hopper. The dotted lines in fig. 2 will give an idea how the internal part of the machine is constructed. Only one tooth is represented on the cylinder by the dotted lines, to show the position of the whole.—[Edinburgh Quarterly Journal of Agriculture.]

The Farmer's Magazine, conducted by the Editor of the Mark Lane Express. London.

This is a cheap quarto publication, issued in eight weekly pages, and stitched and covered

Having just finished reading the greater part of the Magazine for the years 1832 and 1833, we shall now lay before our readers abridged notices and extracts that we deem of interest to our readers.

THE WELSH PONY is one of the most beautiful little animals that can be imagined. He has a small head, high withers, deep, yet round, barrel, short joints, flat legs, and good round feet. He will live on any fare, and can never be tired out.

WHEAT.—The red lammas wheat, red straw, or red ear, is reckoned by many farmers the best of all the sorts hitherto known, yielding the finest and whitest flour.

Velvet wheat yields also much white flour, is thin skinned, less subject to mildew and blight than other wheat, as the downy hull appears to protect it. It is grown much in the Isle of Thanet, on the sea-coast.

USE OF THE BRAMBLE.—This shrub, which we are in the habit of despising, and which is only used by the chance passenger, occasionally plucking its fruit, possesses, however, several advantages which deserve our attention. Its roots, when dried in the shade, cut into small fragments, and taken in the shape of a weak infusion, form one of the best specifics against obstinate coughs. Its long branches can in cases of need be used as cords, and its fruit produces an excellent wine, the mode of making which is as follows: "Five measures of the ripe fruit, with one of honey, and six of wine, are taken and boiled, the froth is skimmed off, the fire removed, and the mixture being passed through a linen cloth, is left to ferment. It is then boiled anew, and allowed to ferment in a suitable cask. In Provence, bramble-berries are used to give a deep color to particular wines"—[From the German.]

THE TURNIP FLY.—In an address before the Northamptonshire Farming and Grazing Society, we find it recommended to collect small heaps of rubbish around the turnip-patch, and in two or three days after sowing, to set one or more of them on fire, first having sprinkled some sulphur on them. The wind will carry the smoke over the patch, and either kill or drive away the turnip fly.

FLESH COLORED CLOVER—TRIFOLIUM INCARNATUM.—This grass, as an object of field culture, was, within a few years, brought to the notice of the British public by two English tourists reporting what they had seen in Germany. Two acres, sown on stiff red clay in the middle of April. "The spring was exceedingly dry, and yet it was fit for cutting in six weeks after it had been sown, and a most luxuriant crop it was."

M. Dombarle states in the Annales Agricoles de Reviere, that he has had five years' experience in cultivating it, and considers it of the highest value. It is an annual, and gives only one cut, yet this one is equal to two of red clover. It is not fastidious as to soil—stands the winters of the North of France, and is usually sown in August and September. "The quantity of seed is about twenty-five ounces per acre." The British code of agriculture states, that "it produces two excellent crops in one year, the first of which should be cut as soon as it comes into flower, and the second will produce a considerable quantity of seed. From a communication in the New-England Farmer, of Dec. 4, 1833, by the Honorable John Lowell, we make the following extract. Speaking of seed presented to the Mass. Horticultural Society, by the Honorable Thomas H. Perkins, he says,

"I sowed it about the last week of April. It was in bloom and fit to cut in fifty days. It is not so coarse as Dutch red clover, better furnished with leaves, not liable to lodge or lose its leaves in drying. It furnished a fair second crop in the late uncommon dry season.

"From its rapid growth I think it of great value for an early crop, for soiling in summer, or for supplying food when other grasses are winter killed.

"It is only an annual grass, and therefore can be of no use but for these occasional purposes; but for milk farms to supply the market, or for small dairies on estates round great towns, I think it promises to be highly useful. I have requested my friend Mr. Perkins to import fifty pounds, for myself and a friend, and he has ordered a quantity for himself, which are now on their passage. We shall be able to make a more extensive trial next summer, the result of which will be made known."

The seed may be had of H. Huxley & Co. No. 81 Barclay street, New-York; and of W. R. Prince, Flushing, New-York. One of the writers remarks that care should be had to obtain good seed, and not to sow it too deep.

DRAFTING SHEEP.—Good management of sheep and lambs requires several drafts.

"The next drafting takes place among the fat sheep in Spring which had been fed on turnips. If they are to be sold on the ground to a dealer, a few of the worst should be drafted, and sold separately, otherwise they will assuredly be made the occasion of lowering the price of the rest; and if they are destined for a public weekly market, more care is necessary for the proper assortment of them. They will have to be put into lots of half a score, or a score, according to their strength or number, and each lot marked by a distinct mark on the wool with red or blue paint."

THRASHING.—In some of the parishes of England, flails are substituted for machines—supposing them, all things considered, cheaper

SALT.—Fine particles of salt soften the most stubborn soils, and enable the farmer to till them in the dryest weather.

CATTLE IN ENGLAND.—Our readers have an example in the following extract, of the great increase that is given to human sustenance by improvements in live stock:

A century ago, our cattle, from the inferiority of their food, were not one-half, sometimes even not one-third, of the present weight. It is computed that England and Wales now contain, at least, five millions of oxen, and a million and a half of horses, of which about a million are used in husbandry, 200,000 for pleasure, and 300,000 are colts and breeding mares. The number of sheep is about twenty millions, and eight million lambs. The number of long-wooled sheep is about five millions, their fleeces averaging 7 to 8 lbs.; and of short-wooled sheep fifteen millions, the weight of fleece averaging from 3 to 3¼ lbs. The whole quantity annually shorn in England is from eighty to eighty-five millions of pounds. The Merinos were introduced about the beginning of the present century, and were imported in large numbers after our alliance with Spain in 1809. The great pasturage counties are Leicester, Northampton, Lincoln, and Somerset; and for butter and cheese, Cheshire, Gloucestershire, and Wiltshire. The import of butter and cheese from foreign countries is checked by duties, but these are important articles of Irish commerce with England.

Cultivation of Silk at Mansfield, Connecticut.

By B. STORRS. To the Editor of the New-York Farmer.

MANSFIELD CENTRE, Ct. Dec. 18, 1833.

DEAR SIR,—Yours of the 30th ult. has remained so long unanswered that you may think me indifferent to the subjects of your inquiry. Not so, sir; I feel a deep interest in the growing prosperity of our country, in its various and multiplied manufacturing establishments, which are constantly springing into existence, and in none more so than in the production and manufacture of silk; none which presents in my estimation greater encouragement, both to the agriculturist and the manufacturer—none which promises fairer to become of extensive utility and profit to this country.

With regard to the cultivation of the mulberry and the growing of silk in this place, it may not be generally known that the business has been successfully prosecuted here for more than seventy years; but, though gradually increasing during this period, there has been but very little improvements in the method of conducting the business, or in the application of the raw material to manufacturing purposes, any further than the production of sewing silk and twist, and this almost exclusively confined to the labor of the family, upon the domestic spinning-wheel. But one thing has been abundantly demonstrated; that is, that the white mulberry is easily cultivated, and that the rearing of the silk-worm, and the production of silk, notwithstanding all the particularity, minuteness, and mystery, with which the subject has been treated, and invested, may be profitably pursued, with but little more knowledge or care than is requisite for the successful rearing of pigs, or poultry. Shelter them from cold, storms and wind, and feed them when hungry, whether it be in a corn-house, barn, cider-mill house, or laboratory, built on purpose for the business, a profitable crop of silk may be produced. I would not by this remark be thought to undervalue enterprize and improvement, or to treat lightly particular attention to convenience and neatness in every branch of agriculture. I highly value all the associations and societies of the present day, formed for the advancement and improvement in knowledge of the mechanic and agriculturist; but describe to a person entirely unacquainted with the manner in which wool is produced, the animal which produces it, and inform him how this animal must be reared, fed, housed, and treated, according to the practice of some of our most wealthy and scientific farmers, its peculiar habits, and liability to disease in case of neglect, and he would be very apt to conclude, that, being unable to sustain the necessary expense, he might as well not attempt to rear an animal that required so much care and labor. So with regard to the rearing of the silk-worm, there is reason to fear that the minute particularity and delicate attention to temperature, food, cleanliness, &c. &c. with which the subject has been treated by most writers, may have deterred many from engaging in it; but let them be told, and truly too, that without thermometer, hot-house, stove-room, or laboratory, the silk-worm may be, at the proper season, hatched by the usual warmth of the kitchen; and that with a rough board to lie on, and a corn-house or barn to shelter them from wind and wet, guarded also from the depredations of rats, mice, and fowls, and well supplied with the white mulberry leaf, will produce a profitable crop of silk, they may be induced to try; and having once engaged in the business and found it practicable, may then attend to all the improvements which experience and sound wisdom may dictate. Many persons in this town, who have been for twenty or thirty years successfully engaged in the rearing of silk-worms, should you talk to them about thermometers, hot-houses, and laboratories, would not know what you meant; yet, I doubt not, a due attention to these may be profitable.

With regard to the manufacture of silk in this country, much is yet to be learned; but I consider the experiment as favorably commenced, and nothing more is wanting than that some of our enterprizing and ingenious mechanics should give the subject that attention which its importance demands; and with such improvements in machinery, and the art of manufacturing, as I think the business susceptible, we may soon compete in this, as we do in some of our wool and cotton fabrics, with any portion of the world. I believe it to be a well established fact, that no part of the world now produces a better quality of the raw silk than that which is produced in this country. Since the investigation of the subject by a resolution of Congress, and the encouragement presented by the Legislature of this State, in a bounty upon the propagation of the white mulberry, and upon raw silk, the business has received a new impulse.

The Piedmont reel has been introduced, and with some improvement in the application of a stop motion. was the last season used to some extent, propelled by water and by horse power, as well as by hand, and our ingenious and industrious females find that, without any further instruction in this branch, they can, with the exercise of a little more patience than the old reel required, produce a much handsomer and more valuable article than by the former method. I have now by me a sample of a few ounces, reeled by one of our ladies, which I designed to have presented at the New-York Fair, and which I think in every respect would compete with the production of any country. Thus far, then, I think we may safely say, we *can* and *do* succeed. We have also two small silk manufacturing establishments in this town, propelled by water power, in successful operation, at which single thrown silk, organzine, tram, and every kind of silk, is prepared with ease, by persons bred to the business. The machinery is made in the manner of the most approved English machinery. At these establishments all the silk raised in this vicinity, and reeled on the improved reel as before stated, finds a ready market. Some broad goods have been made, but the business seems not yet to be sufficiently matured to go immediately into the higher branches of manufacture, but must for a time be confined to the smaller and more common articles of silk fabrics. A great proportion of the silk now prepared at our factories here is made use of in the manufacture of the Tuscany grass bonnets.

Having extended my remarks to a much greater length than I anticipated, I will mention as an apology, that having seen most of the publications on the subject which have been circulated in this country in answer to the call of Congress for information, and being well acquainted with the perfectly simple manner in which the business has ever been conducted here, I felt that a plain statement of facts, similar to those I have here given, was necessary, to counteract in some measure the influence of that scientific minuteness with which the subject was treated in those publications, and might be of public utility. Should it appear to you that I am correct in this opinion, you are at liberty to make such use of this communication as you may think proper.

Another subject of your inquiry is, whether silk-worm eggs can be procured here, in reply to which, all I can say is, I have heretofore, when applied to, found no difficulty in obtaining them, to any extent called for, and presume there would be none now. The price, from 6 to 8 cents per thousand; and as they are attached to papers, those papers may be folded and packed in small boxes and sent safely to any part of the country by stage or otherwise.

When at New-York, last spring, I purchased a small lot of the Morus Multicaulis, for the purpose of introducing them into this silk-growing region. They flourished finely last summer, and if our winter climate does not prove too severe for them, bid fair to be an important acquisition to our silk growers. As I am frequently applied to from a distance for information with regard to the value of cocoons, and of the raw silk, I will here state that we have not as yet any extensive reeling establishments, but from the success which attended the trial of the Piedmont reel the last season, I think there is encouragement to enter extensively into the business, and that probably, by another season, such preparation will be made as to afford a ready sale for cocoons, at a fair price, which is now estimated by the bushel—say $2.50 per bushel, for fair, to $3.00 for best. The worth of the raw silk depends much on its being reeled clean, level, and fine. For the former I have paid the above prices for several lots which I purchased the last season, and for the raw silk have paid mostly from $3.75 to $4.00.

Respectfully, your obedient servant,

ZALMON STORRS.

NEW-YORK AMERICAN.

JANUARY 18—24, 1834.

LATER FROM EUROPE.—The George Washington, from Liverpool, brings us London papers of the 24th, and Liverpool of 26th November—ten days later than our previous accounts, though themselves 54 days old—while the latest Liverpool paper, that of 26th, announces the arrival there, of the Napoleon, in 16 days from this port.

We give from the London Spectator of the 23d a good summary of the news of the day, and add to it some details.

The quarrel in Spain is losing its interest. Neither party seems capable of any great effort; and it will probably drag on into a sort of guerilla warfare. Don Carlos still keeps concealed. The paper rupture between the Queen Regent and Miguel signifies not much.

In Portugal the state of things is somewhat similar. Miguel, at *Santarem*, is so strongly posted that Pedro dares not attack him, though he has cut him off from some mills which supplied his forces with flour; but the whole country in his rear is open to him; that loss, therefore, will not be material; and if Pedro's troops are at all of the quality of those which formed a part of the detachment with which *Captain Birt* and his marines were acting, he shows his wisdom in not attempting any attack upon Santarem.

A quarrel, upon points of etiquette, is getting up between the self-made Soldier-King of Sweden, and the Citizen-King of the French. If in nothing else, than in the imitation of the follies of legitimacy—these new made Kings play their parts, as though they were born to them. The Bavarian Monarch, too, it seems, by the annexed article from *Munich*, is occupying his royal leisure in prescribing the etiquette of the road. When the universal German mind is fermenting with thoughts and projects of equal rights and liberal institutions—such conduct as this seems really that of infatuation.

MUNICH, NOVEMBER 11.—On the 7th instant, an ordinance was published here, founded on a Ministerial rescript of the 29th of October. The first article of this ordinance forbids all carriages, no matter to whom they belong, and all riders on horseback, to pass carriages in which their Majesties are; and, when the King is on horseback, it is forbidden to pass or remain before his Majesty. The second article orders all carriages and horsemen, who may meet their Majesties, to draw up immediately, and halt till they have passed by.

In England rumors of changes in the Ministry were frequent: *Lord Grey* desires, it is supposed, to retire, and wishes, it is added, to make his son-in-law, *Lord Durham*, his successor as *Premier*. To this Lord Brougham, who looks to that station himself, objects. *O'Connell* has recommenced agitation in Ireland, having, as we presume, lost all hope of office from the Ministry.

[*From the London Courier of 21st November.*]

We notice in the French Papers, too, a statement that the celebrated naturalist, M. Geoffroy St. Hilaire, the President of the Academy of Sciences, was disposed to concede to M. Raspail a prize of 10,000 francs for his new system of organic chemistry, on some condition of his confining his attention to science; but the Minister, M. Guizot, interfered, and prevented it, on account of M. Raspail being, politically speaking, a dangerous citizen.—The Academy submitted to the minister's decision, not to the judgment of the man of science.

[*From the London Spectator of 23d November.*]

PORTUGAL.—The war in Portugal is carried on with little spirit: there is a strong disinclination to fight, on both sides. The Miguelite army remains within the Walls of Santarem; and Pedro seems to be destitute of the means of attacking it with any probability of success. He ordered a portion of his force to be drawn up below the town, by way of bravado, or in order to ascertain whether the enemy would have the folly to leave their fortifications and fight in the open plain; but the Miguelite General only laughed at him, and his troops did not move a foot.

On the 2d instant, however, there was a little fighting at Alcaer do Sal, a small town near St. Ubes, garrisoned by a detachment of the Pedroite army, consisting of about 1,000 Lisbon Militia and 150 English and Portuguese Marines. The Miguelites, in number about 1,500, under the command of Colonel Lemos, made an attack upon them early in the morning. The following account of what then took place is extracted from a letter written to Admiral Napier by Captain Birt, who commanded the Marines.

"The English and Portuguese Marines under my command were stationed in front of the Constitutional troops as skirmishers, and kept the enemy at bay till the cavalry charged them in three squadrons; when we immediately formed into a square, and twice repulsed them with great loss. We then prepared to charge a column of infantry, who were advancing; but the Portuguese Volunteers and 9th infantry, who were stationed in our rear, seeing the determined manner in which we were attacked, *betook themselves to rapid flight, without firing a shot*, leaving my men with some of the Portuguese Marines to do the best we could; when, finding ourselves overpowered by numbers, we commenced our reatreat, keeping the enemy at bay, and covering the flight of the Portuguese. I tried to persuade the Colonel commanding our troops (who asked my opinion) to retire to a convent, a strong position on our right, at which place we might have made a good stand. Instead of doing this, he led to the marshes beside the river; and here the scene was beyond description; the whole country was strewed with arms and accoutrements, which the Volunteers threw away in their flight, and the enemy's cavalry closing on them, hewed them down in all directions. I kept my men together, and made good my retreat to the side of the river, with the loss of only three men; but on coming to the river, for want of boats (the Portuguese troops having taken all) the men were obliged to throw away their arms and accoutrements, and swim across under a heavy fire of musketry, who lined the north bank in this place. I am sorry to say my loss was great, in consequence, I fear, of some of the officers and men breaking off to the right, and attempting to pass the river lower down. They were all cut off.

The Captain adds, that the Portugese Colonel lost all command, and gave himself up to the enemy; that a great number of the volunteers also passed, crying "Viva Don Miguel!" And that the Pedrottes loss in killed, and prisoners, could not be less than 800 men. Admiral Napier, in a letter to the Minister of Marine, recapitulates Captain Birt's account of the affair; and says, that of the troops engaged on the Queen's side, he hears that "200 are at Palmella, 100 are at St. Ubes, and as for the rest, God knows where they are."

If Don Pedro's army is composed to any extent of his Lisbon levies, it is not surprising that he hesitates to attack Santarem. He had better have treated his British recruits, who lately returned in the James Watt, full of disgust and without pay, with good faith and common humanity.

SPAIN.—Mr. Villiers formally presented his credentials to the Queen Regent at Madrid on on the 6th instant. Until then, Lord William Harvy had figured as the official representative or Chargé d'Affaires. At Madrid, and throughout the Southern provinces of the kingdom, the Queen's authority is undisturbed. The partisans of the Pretender are treated with some harshness.

In the Northern provinces, Carlism seems to prosper: the insurgents have driven the Queen's troops from Irun; and have thus closed another line of communication to Madrid. General Saarsfield, of whose march upon Vittoria and expected demolition of the rebels so many reports have been current, was still at Burgos, when the latest accounts left Bayonne, seven days ago. Preparations are making to supply St. Sebastian with provisions, and a number of Constitutionalists have arrived there, to augment the garrison, which is weak and not well provided. There has been a rising in Valencia; the principal town in the province, San Philipe, having proclaimed Don Carlos; but it appears to have been speedily suppressed.

General Quesada, who commands the Queen's troops, at Valladolid, has issued his proclamation to the inhabitants of Old Castile. "It breathes," says the *Courier*, "a fierce, uncompromising war against the denounced monks and their supporters. Such sentiments must make every man apprehensive that war in Spain, instead of being a mere contest for a throne, can be nothing less than a war of extermination."

FRANCE.—The French Liberals have altered their tone respecting the interference of their Government in the affairs of Spain. A short time ago, they were eager for the despatch of an army to support the Queen and suppress the Carlists. But they have since discovered, that the support of the Queen may be a very different affair from the establishment of a Liberal government; and have a reasonable dread that French arms, if used at all, would be for the benefit of Absolutism, or at least, what they abominate nearly as much, the system of the Juste Milieu. Now, therefore, they would prefer to assist the Queen with a loan of money; which would probably answer her Majesty's purpose much better than an auxiliary army of Frenchmen. According to present appearances, Louis Philip will do neither one nor the other.

BELGIUM.—King Leopold's concerns proceed smoothly. The addresses in reply to his speech were passed unanimously by both Chambers; and it is said that the session is likely to be one of little speechifying and much business. Count Diedrichstein, the Austrian, and Count d'Arnheim, the Prussian Ambassador, have reached Brussels. The latter is already very active in his endeavors to form a commercial treaty, the real object of which is to exclude British manufactures from the Continent. Great inducements, it is said, will be held out to the Belgian manufacturers to become parties to the Prussian system.

TURKEY.—There is a solitary piece of news from Constantinople, but that is important if true: the combined English and French squadrons have entered the Dardanelles, in spite of the recent treaty between Russia and Turkey, by which such entry was forbidden. This is a proper and spirited proceeding, and we hope that the information of the *Standard*, from whom we copy the news, may prove to be correct. It is far better to show at once our perfect contempt for the treaty, in this way, than get entangled in the diplomatic net of endless negotiation with a view to alter it.

IRELAND.—Having completed our budget of foreign intelligence, we turn to the far more interesting and important affairs of the Sister Isle; where, after an interval of comparative calm, the storm which we have seen gathering for some weeks past, has at length burst forth, and promises to rage with the accustomed fury of the season. It is to be hoped that the pilots to whose guidance the state vessel is consigned, are blessed with steady hands and stout hearts, for verily they will need them.

Mr. O'Connell made his appearance at the Four Courts in Dublin on Saturday last; and, with the apprent determination not to lose a moment's time, walked to his old arena, the Corn Exchange; where he drew up and signed a requisition for a public meeting to petition against Tithes and for the Repeal of the Union. This is his first step of renewed agitation in Dublin; which he has declared shall be kept up with unusual energy; and there is every reason to believe that he will keep his word.

LISBON, Nov. 16.—Very little has been done here in the military way for this last week. The contending parties continue nearly in the same positions. On the 10th instant about 6,000 men advanced towards Pernes, from Cartaxo, to destroy the mills in that neighbourhood, which supply Santarem with flour. The Miguelites, 800 in number, retired on their approach, and the Pedroites, after effecting their object, returned to their old quarters. They are drawing their line somewhat closer to Santarem; but the communication is still open with the country in the direction of Abrantes, Coimbra, and Alentejo, so that they get in provisions in abundance. Guerilla parties are going about in all directions, accompanied by a few soldiers, who forward whatever provisions they can collect to Santarem. Unless Don Pedro can send up near 10,000 men more he will not be able, effectually, to encircle the town, and of course it will be folly to calculate on starving them out, when almost the whole country is open to them.—On the 11th inst. the inhabitants came from Aldegalleja, in a great hurry, as the Miguelites were drawing near the town; however, they did not enter it, as they were only in quest of cattle, and drove off about 400 head. The Miguelites who took Alcacer remain still in the neighbourhood; they did not venture to advance on St Ubes, and the garrison is now so much increased that they will get a warm reception; had they pushed forward after the engagment at Alcacer, it was apprehended they might have effected an entry. Admiral Napier carried 400 men thither in a steamer, on the 12th, and the sailors were landed from the Donna Maria armed with pistols and boarding pikes. Napier has not since returned, and it is thought that he will take the command of an expedition to Algarve.

PURE AND WHOLESOME WATER.—This evening the Report of the Commissioners, and of their Engineer, Major Douglass, is to be canvassed by the Board of Aldermen. We hope this important topic will be approached in a proper and liberal spirit, and with an eye to the future demands, as well as present great and urgent wants of this city.

The careful and elaborate surveys made by Major Douglass, of the whole ground between the Croton river and this city, and of all the various sources whence, it was supposed, at different times, a supply of water might be derived, present the matter fully to the Board. To them it belongs to decide whether they will sanction a plan which is certain, permanent, and adequate to the future as well as present demands, and of which the utmost cost is fully set forth, and ascertained—or whether they will fritter away in doubtful experiments, and at eventually greater ultimate expense, both time and resources.

The noble aqueduct proposed by Major Douglass is, we are persuaded, the only effective, as it is the only worthy plan. We have heard no single objection to it but the apprehension that the stream might freeze. When, however, it is considered that by the descent obtained, the water at the passage of Harlem river, (the most exposed point) will run at the rate of 125 feet per minute, and in a stream varying from 4 to 6 feet in depth, there does not seem much to apprehend on the score of frost. As to the substitution of iron pipes, it is preposterous. No single line of pipes of any dimensions yet made, could supply even present wants, and the expense of several lines would be much greater than that of the aqueduct, with less certainty of result and durability. Our own thorough conviction is, that the plan of Major Douglass will, if carried out, both fulfil all expectations, and in the facilities which it will furnish to the city, not only pay for itself, but constitute a valuable source of municipal revenue.

Another Steamboat Accident.—It will be seen by the following extract from the report of the steamer Orleans, which arrived at New Orleans on the 31st ult., that the steamer Telegraph, trading from that port to Bayou Tunica, has been lost, together with the greater part of the cargo. The extract is furnished by the New Orleans Courier:

"On the night of the 27th instant, at 7 o'clock, in the bends near the Palmyra Islands, came in contact with the steamer Telegraph, Capt. Prior. The concussion was such that she sunk in 10 minutes in three and a half fathoms water, during which time all her passengers and crew were taken from on board by us. In about three hours afterwards, the Cincinnatian and North Alabamian came alongside, affording an opportunity to the passengers to proceed; of which they all availed themselves, with the exception of a few who remained on board. Shortly after both boats left the wreck. In about six hours, with the assistance of Capt. Prior and his crew, we succeeded in saving a considerable quantity of the passengers' baggage, and some of the cabin furniture. The Cincinnatian brought from a neighboring woodyard, where she heard of the disaster, a good flat boat which was left with Capt. Prior for the purpose of attending on the wreck.

Great Gale at Buffalo.—A letter from Buffalo, dated the 13th inst., furnishes the following particulars of a gale of unprecedented violence at that place.

Between 4 and 5 o'clock yesterday afternoon commenced the severest gale of wind that ever visited the city, or that is known by the oldest inhabitants of Buffalo, and continued until near daylight this morning before it abated, blowing down chimneys, unroofing buildings, upsetting carriages, and blowing in windows, doors, &c. &c. It now blows a gale, and the water is 4 feet lower than it was at 3 o'clock this morning. The ice is within 10 rods of my house on Crow street. The following is a brief history of the damage:

The road is completely blockaded from the foot of Main street to the Ferry, with ice and wood and lumber. The stages have to go west through the Indian village. The water was six inches deep in Willard's store. The wharves are much injured the whole length of the creek. Some vessels broke loose from their moorings. The starboard wheel house of the steam boat N. York was blown off. A Eaton's wharf is materially damaged. The chimneys and battlements of the Commercial Buildings are blown down, and the roofs broken in. The south end of the block on Main street is badly injured. A part of the balustrade on the Mansion House is gone. Taylor's and Hedgus on the Terrace, battlements and chimneys are gone. Einers', on the corner of Main and Seneca strees., completely unroofed. Case's Farmer's Hotel, three chimneys and battlements down. The brick front of Wilgus', on the east side of Main-st. is gone. Chimney and battlements of L. H. Pratt and the Journal office, blown down, broke through the roof and two floors below. A. and A. Raynor's roof broke in and fell to the second story; where it was propped with timbers to the risk of many lives.

The battlements, chimneys and part of the roof of Rathbun's Cremlin buildings are blow off. Some of the windows of the Baptist church blown in. All the windows of the Congregationalist's church, broken in fronting the court house square, and some on the east side. On Seneca-street, Heywood's chimneys off and Doughty's house caved in. The county poor house is unroofed and about 50 inmates unprovided for, &c. &c.—[Albany Argus.]

[*From the Albany Argus.*]

CANAL TOLLS.—The Canal Board have had a special meeting for the purpose of regulating the Canal tolls, and the rates are published at this early day, for the information of those who are interested in the subject.

The rates of toll upon merchandize have been reduced 25 per cent.; upon flour, salted beef and pork, butter and cheese, beer and cider, the reduction is 10 per cent.; on timber, square and round, carried in boats, the toll is reduced 50 per cent.; sawed lumber, carried in boats, is reduced from 10 to 6 mills per 1000 feet per mile. Those who are familiar with the old rates will perceive that there has been a very general reduction in the rates of toll. On most articles, the produce of the country, as well as on merchandize, the tolls by the present reduction are brought within a fraction of the constitutional minimum.

The toll upon foreign salt has been reduced from 5 to 3 cents per 1000 pounds per mile. Previous to 1831, the toll upon foreign salt was one cent and four mills. In consequence of the reduction by Congress of the United States duty, the Canal Board, in 1831, raised the toll upon foreign salt from one cent. and four mills to ten cents per 1000 pounds per mile. The constitution having been altered so as to enable the Legislature to reduce the State duty upon each bushel of salt from 12 1-2 to 6 cents, the Canal Board have modified the rates of toll upon foreign salt.

RATES OF TOLL.

At a meeting of the Canal Board, at the Comptroller's Office, in the city of Albany, on the 13th January, 1834, the following rates of toll were established, in lieu of all rates heretofore established by this Board:—

No.		cts. m. fr.
	Provisions.	
1.	On flour, salted beef and pork, butter and cheese, beer and cider, per 1000 pounds per mile	0 4 5
2.	On bran and ship stuffs in bulk, per 1000 pounds per mile	0 4 5
	Iron, Minerals, Ores, &c.	
3.	On salt manufactured in this state, per 1000 lbs. per mile	0 2 3
4.	On foreign salt, 1000 pounds per mile	3 0 0
5.	On gypsum, the product of this state, per 1000 pounds, per mile	0 2 5
6.	On brick, sand, lime, clay, earth, leached ashes, manure and iron ore, per 1000 pounds per mile	0 2 5
7.	On pot and pearl ashes, kelp, mineral coal, charcoal, pig iron, broken castings and scrap iron, per 1000 pounds per mile	0 4 5
8.	On stove, and all other castings, going to or from tide water, per 1000 pounds per mile	0 5 0
9.	On copperas and magnese, going towards tide water, per 1000 per mile	0 5 0
10.	On bar and pig lead, going towards tide water, per 1000 pounds, per mile	0 4 5
	Furs, Peltrys, Skins, &c.	
11.	On furs and peltry (except deer, buffalo and moose skins) per 1000 pounds per mile	1 4 0
12.	On deer, buffalo and moose skins, per 1000 lbs. per mile	0 7 0
13.	On ship skins and other raw hides of domestic animals of the United States, per 1000 lbs. per mile	0 4 5
14.	On imported raw hides of domestic and other animals, per 1000 pounds per mile	0 9 0
	Furniture, &c.	
15.	On household furniture, accompanied by, and actually belonging to, families emigrating, per 1000 pounds per mile	0 5 0
16.	On carts, wagons, sleighs, ploughs and mechanics' tools, necessary for the owner's individual use, when accompanied by the owner, emigrating for the purpose of settlement, per 1000 pounds per mile	0 5 0
	Stone, Slate, &c.	
17.	On slate and tile for roofing, and stone ware, per 1000 pounds per mile	0 5 0
18.	On all stone, wrought or unwrought, per 1000 pounds per mile	0 2 5
	Lumber, Wood, &c.	
19.	On timber, squared and round, per 100 cubic feet, per mile, carried in boats	0 5 0
20.	On the same, if carried in rafts, per 100 cubic feet per mile	1 5 0
21.	On boards, plank, scantling, and sawed timber, reduced to inch measure, and all sliding, lath, and other sawed stuff less than 1 inch thick, carried in boats, (except such as is enumerated in regulations, Nos. 23 and 32,) per 1000 feet per mile	0 6 0
22.	On the same, if transported in rafts, per 1000 feet per mile	2 0 0
23.	On sawed late of less than five feet in length, split lath, hoop poles, rowing cars and broom handles, per 1000 pounds per mile	0 2 5
24.	On staves and heading, transported in boats, per 1000 pounds per mile	0 2 0
25.	On the same, if transported in rafts, per 1000 pounds per mile	0 3 0
26.	On shingles per M per mile, carried in boats	0 2 0
27.	On the same, if conveyed in rafts, per M. per mile	0 4 0
28.	On split posts, and rails for fencing, per M. per mile, carried in boats	2 0 0
29.	On the same, if conveyed in rafts, per M. per mile	3 0 0
30.	On wood for fuel, (except such as may be used in the manufacture of salt, which shall be exempt from toll,) and tan bark, per cord per mile	1 0 0
31.	On the same, if transported in rafts, per cord per mile	2 0 0
32.	On sawed stuff for window blinds, not exceeding one fourth of an inch in thickness, per 1000 pounds per mile	0 5 0
	Agricultural Productions, &c.	
33.	On cotton, per 1000 pounds per mile	0 4 5
34.	On live cattle, sheep and hogs, per 1000 pounds per mile	0 5 0
35.	On horses, (and each horse when not weighed, to be computed at 600 pounds, per 1000 pounds per mile	0 7 0
36.	On rags per 1000 pounds per mile	0 4 5
37.	On hemp and tobacco going towards tide water, per 1000 pound per mile	0 4 5
38.	On hemp, going from tide water, per 1000 lbs per mile	0 4 5
39.	On wheat and all other agricultural productions of the United States, not particularly specified, and not being merchandize, per 1000 lbs. per mile	0 4 5
40.	On merchandize	0 9 0
	Articles not enumerated.	
41	On all articles not enumefated or excepted, passing from tide water, per 1000 pounds per mile	0 9 0
42.	On all articles not enumerated or excepted, passing towards tide water, per 1000 pounds per mile	0 4 5
	Boats and Passengers.	
43.	On boats used chiefly for the transportation of persons and navigating the Erie canal between Schenectady and Utica, per mile	11 0 0
44.	On boats used chiefly for the transportation of persons, and navigating the Erie canal west of Utica, per mile	6 0 0
45.	On boats used chiefly for the transportation of persons, and navigating the Champlain or Champlain and Junction canal, per mile	6 0 0
46.	On boats used chiefly for the transportation of persons, and navigating the Oswego canal, per mile	6 0 0
47.	On boats used chiefly for the transportation of persons, and navigating the Cayuga and Seneca canal, and the lateral canal to East Cayuga Village, or either of them, per mile	6 0 0
48.	On boats used chiefly for the transportation of persons, and navigating the Junction canal, and not connected with regular lines of boats for the transportation of persons on the Erie or Champlain canals, per mile	50 0 0
49.	On boats used chiefly for the transportation of property, per mile	2 0 0
50.	On each person over eight years of age, transported in a boat used chiefly for the transportation of persons, per mile	0 2 0
51.	On each person over 12 years of age, transported in a boat used chiefly for the transportation of property, per mile	0 2 0

Resolved, That the foregoing rates of toll be, and they are hereby established; and that the same be hereafter charged and collected on the several canals of this state, in lieu of all rates of toll heretofore established upon any or either of the said canals, or any part thereof.

STEPHEN VAN RENSSELAER,
SAMUEL YOUNG,
WILLIAM C. BOUCK,
JONAS EARLL, Jr.
MICHAEL HOFFMAN,
Canal Commissioners.

A. C. FLAGG,
JOHN A. DIX,
GREENE C. BRONSON,
A. KEYSER,
SIMEON DE WITT,
Commissioners of the Canal Fund.

[COMMUNICATED.]

A pair of silver pitchers, to be presented by the citizens of Brooklyn to Commodore Chauncey, are just finished by Gardner corner of Broadway and Liberty street, where they will remain, and may be seen for two or three days.

Appointments by the Governor and Senate—TUESDAY, JANUARY 14.

Jonathan D. Stevenson, of the city of New York, inspector of leaf tobacco for said city, in place of Wm. Simpson, whose term of office has expired.

SATURDAY, JAN. 18.—Wm. C. Haggerty, of New York, to be auctioneer in the place of John F. Adriance, resigned.

Two of the buildings, connected with one of the Powder Mills, belonging to Loomis, Hazard & Co. in Manchester, Connecticut, were blown up on the 20th instant, (the cracking works and dry house.) Six men were killed, viz. John Rockwell, and Daniel Avery, of East Windsor; Mr. Giles, and

Mr. Bivins, of Hartford; Harvy Fox, of Bolton; Mr. Allen, of New-York—loss of property small; cause of the explosion, unknown.—[Gazette.]

JACQUELINE.

"Death lies on her, like an untimely frost
Upon the sweetest flower of all the field."

"Dear mother—is it not the bell I hear?"

"Yes, my child: the bell for morning prayers. It is Sunday to-day."

"I had forgotten it. But now all days are alike to me. Hark! it sounds again—louder—louder. Open the window, for I love the sound. There; the sunshine and the fresh morning air revive me. And the church bell—oh, mother——it reminds me of the holy Sabbath mornings by the Loire: so calm, so hushed, so beautiful! Now give me my prayer-book, and draw the curtain back that I may see the green trees and the church spire. I feel better to-day, dear mother."

It was a bright, cloudless morning in August. The dew still glistened on the trees, and a slight breeze wafted to the sick chamber of Jacqueline the song of the birds, the rustle of the leaves, and the solemn chime of the church-bells She had been raised up in bed, and reclining upon the pillow, was gazing wistfully upon the quiet scene without. Her mother gave her the prayer book, and then turned away to hide a tear that stole down her cheek.

At length the bells ceased. Jacqueline crossed herself, kissed a pearl crucifix that hung around her neck, and opened the silver clasps of her missal. For a time, she seemed wholly absorbed in her devotions. Her lips moved—but no sound was audible. At intervals the solemn voice of the priest was heard at a distance, and then the confused responses of the congregation, dying away in inarticulate murmurs. Ere long, the thrilling chant of the Catholic service broke upon the ear. At first it was low, solemn and indistinct; then it became more earnest and entreating, as if interceding, and imploring pardon for sin; and then arose louder and louder, full, harmonious, and majestic, as it wafted the song of praise to heaven, and suddenly ceased. Then the sweet tones of the organ were heard—trembling, thrilling, and rising higher and higher, and filling the whole air with their rich melodious music. What exquisite accords!—what noble harmonies!—what touching pathos! The soul of the sick girl seemed to kindle into more ardent devotion, and to be wrapt away to heaven in the full harmonious chorus, as it swelled onward, doubling and redoubling, and rolling upward in a full burst of rapturous devotion!—Then all was hushed again. Once more the low sound of the bell smote the air, and announced the elevation of the host. The invalid seemed entranced in prayer. Her book had fallen beside her—her eyes closed—her soul retired within its secret chambers. Then a more triumphant peal of bells arose. The tears gushed from her closed and swollen eye-lids; her cheek was flushed; she opened her dark eyes and fixed them, with a deep expression of adoration and penitence, upon an image of the Saviour on the cross, which hung at the foot of her bed, and her lips again moved in prayer. Her countenance expressed the deepest resignation. She seemed to ask only that she might die in peace, and go to the bosom of her Redeemer.

The mother was kneeling by the window, with her face concealed in the folds of the curtain. She arose, and going to the bedside of her child, threw her arms around her, and burst into tears.

"My dear mother, I shall not live long—I feel it here. This piercing pain—at times it seizes me, and I cannot—breathe."

"My child, you will be better soon."

"Yes, mother, I shall be better soon. All tears, and pain and sorrow, will be over. The Hymn of Adoration and Entreaty, I have just heard, I shall never hear again on earth. Next Sabbath, mother, kneel again by that window as to-day. I shall not be here, upon this bed of pain and sickness; but when you hear the solemn Hymn of worship and the beseeching tones that wing the spirit up to God; think, mother, that I am there—with my sweet sister, who has gone before us—kneeling at our Saviour's feet, and happy—Oh, how happy!"

The afflicted mother made no reply,—her heart was too full to speak.

"You, remember, mother, how calmly Amie died. Poor child, she was so young and beautiful!—I always pray, that I may die as she did. I do not fear death as I did before she was taken from us. But, oh—this pain—this cruel pain—it seems to draw my mind back from heaven. When it leaves me I shall die in peace."

"My poor child!—God's holy will be done!"

The invalid soon sank into a quiet slumber. The excitement was over, and exhausted nature sought relief in sleep.

The persons between whom this scene passed, were a widow and her sick daughter, from the neighborhood of Tours. They had left the banks of the Loire to consult the more experienced physicians of the metropolis, and had been directed to the *Maison de Sante*, at Auteuil, for the benefit of the pure air. But all in vain. The health of the suffering, but uncomplaining patient, grew worse and worse, and it soon became evident that the closing scene was drawing near.

Of this, Jacqueline herself seemed conscious; and towards evening, expressed a wish to receive the last sacraments of the church. A priest was sent for; and ere long, the tinkling of a little bell in the street announced his approach. He bore in his hand a silver vase containing the consecradted wafers, and a small vessel, filled with the holy oil of the extreme unction, hung from his neck. Before him walked a boy carrying a little bell, whose sound announced the passing of these symbols of the Catholic faith. In the rear, a few of the villagers, bearing lighted wax tapers, formed a short and melancholy procession. They soon entered the sick chamber, and the glimmer of the tapers mingled with the red light of the setting sun, that shot his farewell rays through the open window. The vessel of oil, and the vase containing the consecrated wafers, were placed upon a table in front of a crucifix that hung upon the wall, and all present, except the priest, threw themselves upon their knees. The priest then approached the bed of the dying girl, and said in a slow and solemn tone:

"The King of Kings and Lord of Lords has passed thy threshhold. Is thy spirit ready to receive him?"

"It is, father."

"Hast thou confessed thy sins?"

"Holy father, no."

"Confess thyself, then, that thy sins may be forgiven, and thy name recorded in the book of life."

And, turning to the kneeling crowd around, he waved his hand for them to retire, and was left alone with the sick girl. He seated himself beside her pillow, and the subdued whisper of the confession mingled with the murmer of the evening air, which lifted the heavy folds of the curtains and stole in upon the holy scene. Poor Jacqueline had few sins to confess—a secret thought or two towards the pleasures and delights of the world—a wish to live, unuttered, but which to the eye of her self-accusing spirit seemed to resist the wise providence of God: no more. The confession of a meek and lowly heart is soon made. The door was again opened; the attendants entered, and knelt around the bed, and the priest proceeded:—

"And now prepare thyself to receive, with contrite heart, the body of our blessed Lord and Redeemer. Dost thou believe that our Lord Jesus Christ was conceived by the Holy Spirit, and born of the Virgin Mary?"

"I believe."

And all present joined in the solemn response—"I believe."

"Dost thou believe that the Father is God, that the Son is God, and that the Holy Spirit is God—three persons and one God?"

"I believe."

"Dost thou believe that the Son is seated on the right hand of the Majesty on high, whence he shall come to judge the quick and the dead?"

"I believe."

"Dost thou believe that by the holy sacrament of the church, thy sins are forgiven thee, and that thus thou art made worthy of eternal life?"

"I believe."

"Dost thou pardon, with all thy heart, all who have offended thee, in thought, word, or deed?"

"I pardon them."

"And dost thou ask pardon of God and thy neighbour for all offences thou hast committed against them, either in thought, word or deed?"

"I do."

"Then repeat after me; O, Lord Jesus, I am not worthy, nor do I merit, that thy divine Majesty should enter this poor tenement of clay; but according to thy holy promises be my sins forgiven, and my soul washed white from all transgression."

Then taking a consecrated wafer from the vase, he placed it between the lips of the dying girl, and while the assistant sounded the little silver bell, said:—

"*Corpus Domini nostri Jesu Christi custodiat animam tuum in vitam eternam.*"

And the kneeling crowd smote their breasts, and responded in one solemn voice:—

"Amen!"

The priest then took from the silver box on the table a little golden rod, and dipping it in holy oil, annointed the invalid upon the hands, feet, and breast, in the form of the cross. When these ceremonies were completed, the priest and his attendants retired, leaving the mother alone with her dying child, who, from the exhaustion caused by the preceding scene, sunk into a death-like sleep.

"Between two worlds life hovered like a star,
'Twixt night and morn upon the horizon's verge."

The long twilight of the summer evening stole on; the shadows deepened without, and the night-lamp glimmered feebly in the sick chamber; but still she slept. She was lying with her hands clasped upon her breast—her pallid cheek resting upon the pillow, and her bloodless lips apart but motionless and silent as the sleep of death. Not a breath interrupted the silence of her slumber. Not a movement of the heavy and sunken eye-lid—not a trembling of the lip—not a shadow on the marble brow told when the spirit took its flight. It passed to a better world than this.

"There's a perpetual spring—perpetual youth;
No joint-benumbing cold, nor scorching heat,
Famine, nor age, have any being there."

LITERARY NOTICES.

No. XI.

MONROE, M. T., Dec. 3, 1833.

The ride from Detroit hither is dull enough at this season of the year. The road leads through almost dead level, and the muddy streams creep over the fat black soil as if they had gormandised upon its rich vegetation till grown too lazy for locomotion. Among others, the Huron river, from which—seeing that it rises in one of the brightest and most beautiful lakes in the Peninsula—better things might be expected, waddles on to the lake as little excited by the flocks which frolic on its bosom as an Alderman after dinner by the flies that disport upon his jerkin. Occasionally, indeed, some bright little rill will ripple across the road, and smirk over its yellow pebbles on its way to the big lake, with much the same air that the mill streams of Long Island dance over the level ground while hurrying to the sea. But a wet prairie soon intervenes, and the innocent rivulet, like a child that is snubbed, becomes at once silent and sulky.—But though some parts of Wayne county are thus unattractive, I am told that other sections contain much arable land of excellent quality, consisting of sand loam and some clay with heavy timber, and occasionally fine bottoms along the streams. The population is about 8000.

The village of Monroe, in the county of the same name, from which I now write, is situated on the banks of the river Raisin, and about two miles from its entrance into Lake Erie. It was incorporated two years since, and comprizes a part of the old site of Frenchtown, celebrated, as you remember, in the annals of the last war. The place is said to be regularly laid out, but the most business part of it—and it is the fussiest little town in the world—looks as if the buildings had all been chucked from the other side of the river, and left to settle just where they might fall upon this. If the place continues to increase as rapidly, however, as it has during the last year—the population having doubled in that time—the inhabitants can afford to burn down the river side of the village and arrange it to more advantage. There are now about 150 houses, of which 20 or 30 are stone; some of them are wholesale establishments, and make a very handsome display of fancy goods. There are also two grist mills immediately in the town, a woolen factory, an iron foundry, several saw mills, a chair factory, a tannery, &c. And yet, notwithstanding the supply of water power affords every facility for the use of machinery, the demand for manual labor is very great, and mechanics of every kind may here, as in Detroit, find constant employment. Indeed, I am told, that the demand for mechanics in every part of Michigan, is excessive; and as for laborers, I have seen them repeatedly advertized for by written notices on tavern doors and elsewhere. The emigrants to the territory, I find, are generally people of a very respectable class, who have both the

disposition and the means to employ the services of others around them.

The "Bank of the River Raisiu" is established at this place, with a capital of $100.000; and though in its infancy, is said to be doing a very flourishing business. The notes are among the handsomest specimens of bank note engraving I have seen. There is also a Land Office established here, at which the sales of public lands since last April amount to upwards of $22,000; the sales at Detroit and White Pigeon together a little exceeding this sum. The government price of land ($100 for 80 acres) being the same in every part of the territory, this will give you some idea of the immigration into the Peninsula.

I must not forget to mention that with a population of only 1600 souls, five religious denominations are represented in their respective clergymen at Monroe, and that three of these, the Roman Catholic, Episcopal and Presbyterian, have each a neat Church of their own. I ought to add that a newspaper, with a good circulation, is printed here.

The advantageous position of Monroe, situated as it is at the head of Lake Erie, induced the government to make an appropriation for improving the harbor, which, except that of Maumee, is the only one at this part of the Lake. The lamented Major Maurice, of the Engineer Corps, (who, you may remember, fell down and instantly expired in the act of shaking hands with General Gratiot at Washington, last winter,) and whom the inhabitants of this place speak of with the tenderest remembrance—made minute surveys of the harbor and of the different channels of the river; and the bill which has been at various times introduced into Congress for their improvement was based upon his reports. A bill was passed at the last session of Congress appropriating $8,000 for rebuilding the pier at the mouth of the river, and also appropriating the sum of $20,000 for a road from La Plaisance bay, through which the Raisin debouches into Lake Erie, to intersect the Chicago road, which traverses the whole Peninsula, at a point about 40 miles from here; an improvement which will open a new market to Southern and Western Michigan, and contribute of course much to the prosperity of Monroe. A bill was also passed by both houses appropriating $15,000 for a Canal connecting the waters of Lake Erie and the River Raisin by a cut across the bar at the mouth of the latter. The money has not been expended, however, in consequence of an oversight in the engrossing clerk, which from his omitting this important item, has prevented the bill as yet becoming a law. The monies appropriated for the pier and road have already been mostly expended, and those public works are now nearly completed under the active and efficient superintendence of Capt. Henry Smith, of the Engineer Corps. When all these improvements are completed, Monroe must come in for a large share of the immense trade and commerce which must flow through the three outlets of Eastern Michigan. The mouth of the Maumee can hardly compete with it on account of the extreme unhealthiness of that swampy region; but I am inclined to think that the enterprizing inhabitants of this thriving little place are somewhat too vivacious in their expectations, when they think of not only rivalling, but outstripping, the ancient city of the Straits on the onward road to prosperity. Detroit, like every other point selected by the French on the Western waters of our country, is as commanding a position, whether for war or trade, as could be chosen.

The Monroeites are however a driving people in their way. They are now building a steamboat of the largest class, which will cost not less than $45,000, to ply directly between here and Buffalo, and this morning I saw launched a beautiful schooner, for the lake navigation. It was the first launch that had ever taken place at Monroe, and the occasion caused a general turn out of the inhabitants, who hurried to the spot a mile or two off upon horses of every variety of appearance. There was the bull-necked French pony and his scraggy looking Indian cousin, the sleek spongy looking Ohio horse and the clean-limbed quickly-gathering Kentuckian, galloping between the swift but shuffling Illinois pacer and and the high-actioned tight looking New York trotter. Every one rode as if for a wager, and when we drew our reins the talk about horse-flesh superseding almost the interest in the schooner, showed that the Monroeites, like Catalino and N. Purdy, deserve to be celebrated for their judgment in these matters. A very good and full band of Amateur Musicians composed of respectable private individuals of the village, came at last upon the ground, and changed the subject to the name of the new vessel which several wanted to alter before launching, from the hackneied one of Diana to the more charactertstic sound of *Tecumseh*, the spot being so celebrated in the memory of that great chief. "You knew Tecumseh then sir," said I to an old gentleman, who, I was informed, had been field officer during the late war, and engaged in several battles. "I did sir, and he was as thorough a gentleman and as high toned an officer as any in the British service." The chief, you know, actually held his commission as a general officer immediately from the king. "What do you think then sir of his massacre upon this spot," I rejoined. "The barbarity of that act, sir, was only in accordance with Indian ideas of warfare. The disgrace of it attaches entirely to the English officer (Proctor) who permitted, perhaps sanctioned, the atrocity. The old officer's blood seemed to kindle anew as he dwelt upon that horrible slaughter of a force which had capitulated on honorable terms with a full reliance on the the foe for protection. I asked him about the sick and wounded, who were burnt up in the hospital or shot to death as they ran shrieking through flames. "I saw their bones," he replied, when the ruins were still recent.—I came on with the corps of Kentuckians which advanced soon after into this country, and subsequently so eagerly avenged their countrymen at the battle of the Thames. I walked to the spot where the wounded met their fate, with several others. Richard M. Johnson was one of the number. We looked into the pit, and could see the charred bones and dismembered limbs and sometimes half burnt bodies, plainly below. The men muttered the deepest curses. Col. J. spoke not a word, but the tears rained from his eyes like water, and turning away, he exclaimed, "There lies the best blood in Kentucky, poured out like water." I have given as nearly as I can the very words of the veteran Colonel in describing this sad spectacle. Of the 700 young men murdered here, the greater part were students at law, young physicians, and merchants, and the sons of opulent farmers, and in short the very flower of the youth ef Kentucky. The event threw the whole of that State into monrning. Speaking of the troops who were concerned in the early operations of these regions, I have heard a number of interesting accounts from different persons of the formation of the several corps. One of these, though I may very probably in trying to recall the particulars, confound them with the incidents of another, I will venture to repeat. A graduate of Williams's College, Massachusetts, who had been recently admitted to the bar, was riding through the State of Kentucky, perhaps with the design of finding some favorable point at which to fix his abode and commence the practice of his profession, when he was accosted near a village by a mounted traveller, who mentioning that he was a planter of the country, invited the young advocate with all the freedom of Western hospitality to dine at his house the following day. The invitation was accepted; and the Eastern gentleman arriving at the mansion of the unknown host, found a large party collected, the majority of which were well acquainted with each other, while many were strangers, like himself, and invited apparently in the same manner. The dinner however was got through with sociably enough; and by the time the glass began to circulate freely, all felt that easy confidence in the fellowship and good feeling of each other which is the soul of good society. The host then rising, described briefly the state of the Northwestern frontier, and produced a commission from his pocket to raise a corps and march at once thither. They enlisted to a man; their entertainer provided them on the spot with the necessary stores and munitions, and the band of volunteers started in a few hours on their march to the border.

The name of the noble host was not mentioned, but the Eastern adventurer, who was elected a Lieutenant upon the spot, and soon after became a Captain, was said to have been better known since as Colonel, General, Governor, and lastly Mr. Secretary Cass.

I regret now that I did not inquire into and note down the names and other particulars of a relation so striking, but you have the tale as it was told in my hearing, *minus* the admirable manner of the relation. But I am forgetting the Diana—that burst of music tells that she begins to move on her ways—calmly now she slides like a pair of Broqua's slippers through a quadrille, and now as that bottle of Champaigne foams over her bow, her motion increases almost to the velocity of a gallope. She touches the water and the waves smoke like the pocket of Papa when his prettiest daughter is launched into society.—What a sensation does she make among the waves, and how do they coquet with her on every side. She bobs about till she seems as unstable as themselves. But now the sober Skipper, like a good husband, takes possession of her virgin charms, and placing himself at once at the helm, the unmeaning waters cease their flirting, and sustain her above them without daring to attempt influencing her course. Diana, for one who has been "out" so short a time, may be said to have made "a good match," and become "a respectable member of society." To complete this truly Homeric parallel, I must add that she will "see company" at Buffalo in the spring.

The ride to these dock-yards is rather pleasant; But I have seen handsomer rivers than the Raisin. The banks for several miles around the village have been almost denuded of trees, and the limestone channel lets off so much of the stream through its crevices, that, like a tankard of liquor passed round at a tavern, it is half drank up before it gets to its real owner, the lake. It would delight an eastern farmer though, to see the magnificent pear trees which, tall as the trees of the forest and containing a century of growth, extend through orchards for miles along the stream. Here, too, are apple trees, to the excellence of whose fruit I can testify, that were brought by the French to this country in 1731. The grape vines, too, from which the river takes its name, constitute a beautiful feature in the level landscape, as they hang in rich festoons along the banks of the stream, and climb wherever it is wooded to the tops of the loftiest elms.

There is now an application and great interest making to incorporate a company for the purpose of improving the navigation of the River Raisin and the Saline by a lock and dam navigation, an improvement which it is said can be now made at slight expense. The river flowing gently in its channel, with banks equally graded, seems ready to receive and freight upon its bosom the rich products of the country on its borders. By constructing a tow-path, the expense of which will not be heavy, an excellent canal can be easily made.

The subject of Canals and Railroads awakens at this moment the keenest interest in Michigan; and, after the route of the projected grand communication between Lakes Erie and Michigan, through the peninsula, shall be determined upon by the General Government, I have no doubt but that large and advantageous outlays of private capital upon similar works will be made at other points. Of the plans talked of as best worthy the attention of Government, that of a grand Railroad from Chicago to Detroit, with a lateral one perhaps to Monroe, seems to be considered as the least chimerical; though there are not a few who advocate a Canal immediately across the peninsula, in a direct line, from the mouth of the Maumee to Lake Michigan; and still a greater number who urge the construction of one from the mouth of the Raisin to that of the St. Joseph's, on the opposite side of the Peninsula—a route which would pass through a country acknowledged, I believe, to be the most fertile in Michigan. But another project still remains, as feasible, or perhaps more so, than either of the these. It is to connect the Washtenong or Grand river—a noble stream, which waters half the territory, and is navigable nearly 240 miles in batteaux—with the Huron, a fine stream, which after rising within a few miles of the sources of the Washtenong, empties into Lake Erie on the opposite side of the Peninsula. You can hardly form an idea of the relative importance and feasibility of these projects, without more knowledge of the territory of Michigan than is common at the east, where people generally know about as much of it as they do of Timbuctoo. I have already been so fortunate in my opportunities of talking with well informed people here, that I might venture at once to give you a general view of the country; but I prefer that you should gather whatever information I have to give from my own actual observations made along the road. With regard to scenery, I do not think, from what I have yet seen, I can promise you much; but for agricultural and mineral resources and for manufacturing and commercial advantages, I think I can produce some data, which, if they do not astonish our good people at home in regard to Michigan, will at least account for the immigrants here pouring into the territory as they do, and believing it to be the garden of the Union. You must, however, pick up your information as I shall, by jogging along quietly with me through the country, and observing matters and things just as they come beneath our eyes. To-morrow I start for the interior. Farewell. H.

A TREATISE ON ASTRONOMY, BY SIR JOHN W. F. HERSCHEL, &c. &c: Philadelphia, CAREY LEA & BLANCHARD.—This is an admirable book. It is the work of a master, and a very thorough master, of his lofty science, using his vast attainments and great powers of mind, to simplify and explain to unlearned disciples, the wonders, the truths, and the certain-

ics of astronomy. It is not, strictly speaking, an elementary book, for it assumes, necessarily, a partial knowledge, on the part of the student, of plain and spherical geometry and trigonometry; yet such is the precision of the language, and clearness of the descriptions employed, that with attention, an intelligent mind, though not possessed of this previous knowledge, will, we are quite satisfied, find no difficulty in comprehending and profiting by the instruction of this—again we repeat it—admirable volume.

Observations on the Meteors of November last, by Denison Olmsted, *Prof. Math., Yale College*.—This paper, prepared for the forthcoming No. of Prof. Silliman's Journal of Arts and Sciences, but which has kindly been put into our hands in a separate shape, presents in a connected form all the various accounts of that wonderful phenomenon—*the falling stars*—which, according to the temper and wisdom of hearers, excited the admiration or alarm of the people of this continent and the adjacent isles.

It is however not yet finished, and to its sequel we shall look with interest for some rational and plausible theory, explanatory of so striking and rare an occurrence.

Euphemia of Messina; a Tragedy. Translated from the Italian of Silvio Pellico. New York: Monson Bancroft.—The name of Silvio Pellico would alone suffice to give to this publication general circulation. When to that is added the fact, that his tragedy is rendered into English blank verse, by one evidently master of both languages, and capable of entering into, and fully appreciating, the original, the success of the translation cannot be doubtful. We presume we are indebted for it to the same skilful and tasteful hand, which, in the American Monthly Magazine, so successfully treated the subject of Italian Poetry and Literature. We conclude our necessarily brief and hasty notice to-day, with the annexed extract from the New York Mirror:

[*From the New York Mirror.*]

Description of a Ball on Board the Frigate United States: *by N. P. Willis.*

Trieste.—The guns were run out of the ports; the main and mizen-masts were wound with red and white bunting; the capstan was railed with arms and wreathed with flowers; the wheel was tied with nosegays; the American eagle stood against the mainmast with a star of midshipmen's swords glittering above it; festoons of evergreens were laced through the rigging; the compan on way was arched with hoops of green leaves and roses; the decks were tastefully chalked; the Commodore's skylight was piled with cushions and covered with red damask for an ottoman; seats were laid along from one carronade to the other; and the whole was enclosed with a temporary tent lined throughout with showy flags, and studded all over with bouquets of all the flowers of Illyria. Chandeliers made of bayonets, battle lanterns and candles in any quantity were disposed all over the hall. A splendid supper was set out on the gun-deck below, draped in with flags.—Our own and the Constellation's boats were to be at the pier at nine o'clock to bring off the ladies; and at noon every thing promised of the brightest.

First, about four in the afternoon, came up a saucy-looking cloud from the westernmost peak of the Friuli. Then followed from every point towards the north, an extending edge of a broad, solid black sheet which rose with the regularity of a curtain, and began to send down a wind upon us which made us look anxiously to our ballroom bowlines. The midshipmen were all forward, watching it from the forecastle. The lieutenants were in the gangway, watching it from the ladder. The commodore looked seriously out of the larboard cabin port. It was as grave a ship's company as ever looked out for a shipwreck.

The country about Trieste is shaped like a bellows, and the city and harbor lie in the nose. They have a wind that comes down through the valley, called the "bora," which several times in a year is strong enough to lift people from their feet. We could see by the clouds of dust on the mountain roads, that it was coming. At six o'clock the shrouds began to creak; the white tops flew from the waves in showers of spray, and the roof of our sea-palace began to shiver in the wind. There was no more hope. We had waited even too long. All hands were called to take down chandeliers, sword-stars and ottomans, and before it was half done, the storm was upon us, the bunting was flying and flapping, the nicely chalked decks were swashed with rain, and strown with leaves of flowers, and the whole structure, the taste and labor of the ship's company for two days, was a watery wreck.

Lieutenant C——, who had had the direction of the whole, was the officer of the deck. He sent for his pea-jacket, and leaving him to pace out his watch among the ruins of his imagination, we went below to get early to bed and forget our disappointment in sleep.

The next morning the sun rose without a veil.—The "blue Friuli" looked clear and fresh; the south-west wind came over softly from the shore of Italy, and we commenced retrieving our disaster with elastic spirit. Nothing had suffered seriously except the flowers, and boats were dispatched ashore for fresh supplies, while the awnings were lifted higher and wider than before, the bright-coloured flags replaced, the arms polished and arranged in improved order, and the decks re-chalked with new devices. At six in the evening every thing was swept up, and the ball-room astonished even ourselves. It was the prettiest place for a dance in the world.

The ship has an admirable band of twenty Italians, collected from Naples and other ports, and a fanciful orchestra was raised for them on the larboard side of the mainmast. They struck up a march as the first boatful of ladies stepped upon the deck, and in the course of half an hour, the waltzing commenced with at least two hundred couples, while the ottoman and seats under the hammocloths were filled with spectators. The frigate has a lofty poop, and there was room enough upon it for two quadrilles after it had served as a reception room. It was edged with a temporary ballustrade, wreathed with flowers and studed with lights, and the cabin beneath (on a level with the main ball-room) was set out with card tables. From the gangway entrance, the scene was like a brilliant theatrical *ballet*.

An amusing part of it was the sailors' imitation on the forward decks. They had taken the waste shrubbery and evergreens, of which there was a great quantity, and had formed a sort of grove, extending all round. It was arched with festoons of leaves, with quantities of fruit tied among them; and over the entrance was suspended a rough picture of a frigate with the inscription "*Free trade and sailors' rights.*" The forecastle was ornamented with cutlasses and one or two nautical transparencies, with pistols and miniature ships interspersed, and the whole lit up handsomely. The men dressed in their white duck trowsers and blue jackets, and sat round on the guns playing at draughts, or listning to the music, or gazing at the ladies constantly promenading fore and aft, and to me this was one of the most interesting parts of the spectacle. Five hundred weather-beaten and manly faces are a fine sight any where.

The dance went gaily on. The reigning belle was an American, but we had lovely women of all nations among our guests. There are several wealthy Jewish families in Trieste, and their dark-eyed daughters, we may say at this distance, are full of the thoughtful loveliness peculiar to the race. Then we had Illyrians and Germans, and, Terpischore be our witness—how they danced! My travelling companion the count of Friuli was there; and his little Viennese wife, though she spoke no christian language, danced as featly as a fairy. Of strangers passing through Trieste we had several of distinction. Among them was a fascinating Milanese marchioness, a relative of Manzoni's the novelist, (and as enthusiastic and eloquent a lover of her country as I ever listened to on the subject of oppressed Italy,) and two handsome young men, the counts Neipperg, sons-in-law to Maria Louisa, who amused themselves as if they had seen nothing better in the little duchy of Parma.

We went below at midnight to supper, and the ladies came up with renewed spirit to the dance. It was a brilliant scene indeed. The officers of both ships, in full uniform, the gentlemen from shore, mostly military, in full dress, the gaiety of the bright-red bunting, laced with white and blue, and studded, wherever they would stand, with flowers, and the really uncommon number of beautiful women, with the foreign features and complexions so rich and captivating to our eyes, produced altogether an effect unsurpassed by any thing I have ever seen even at the court *fêtes* of Europe. The daylight gun fired at the close of a *galloppade*, and the crowded boats pulled ashore with their lovely freight by the broad light of morning.

RAILWAY IRON.

☞ Ninety-five tons of 1 inch by ¼ inch, } *Flat Bars* in
200 do. 1½ do. ¼ do. } lengths of 14 to 15
40 do. 1½ do. ½ do. } feet counter sunk
200 do. 2 do. ½ do. } holes, ends cut at
800 do. 2½ do. ½ do. } an angle of 45 degrees with splicing plates, nails
soon expected. } to suit.

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

The above will be sold free of duty, to State Governments, and Incorporated Governments, and the Drawback taken in part payment. A. & G. RALSTON.
9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them. d71mecwr

RAILROAD CAR WHEELS AND BOXES,
AND OTHER RAILROAD CASTINGS.

☞ Also. AXLES furnished and fitted to wheels complete at the Jefferson Cotton and Wool Machine Factory and Foundry, Paterson, N. J. All orders addressed to the subscribers at Paterson, or 60 Wall street, New-York, will be promptly attended to. Also, CAR SPRINGS.

Also, Flange Tires turned complete.
J8 ROGERS, KETCHUM & GROSVENOR.

INSTRUMENTS,
SURVEYING AND NAUTICAL INSTRUMENT MANUFACTORY.

☞ EWIN & HEARTTE, at the sign of the Quadrant, No. 53 South street, one door north of the Union Hotel, Baltimore, beg leave to inform their friends and the public, especially Engineers, that they continue to manufacture to order and keep for sale every description of Instruments in the above branches, which they can furnish at the shortest notice, and on fair terms. Instruments repaired with care and promptitude.

For proof of the high estimation on which their Surveying Instruments are held, they respectfully beg leave to tender to the public perusal, the following certificates from gentlemen of distinguished scientific attainments.

To Ewin & Heartte.—Agreeably to your request made some months since, I now offer you my opinion of the Instruments made at your establishment, for the Baltimore and Ohio Railroad Company. This opinion would have been given at a much earlier period, but was intentionally delayed, in order to afford a longer time for the trial of the Instruments, so that I could speak with the greater confidence of their merits, if such they should be found to possess.

It is with much pleasure I can now state that notwithstanding the Instruments in the service procured from our northern cities are considered good, I have a decided preference for those manufactured by you. Of the whole number manufactured for the Department of Construction, to wit: five Levels, and five of the Compasses, not one has required any repairs within the last twelve months, except from the occasional imperfection of a screw, or from accidents, to which all Instruments are liable. They possess a firmness and stability, and at the same time a neatness and beauty of execution, which reflect much credit on the artists engaged in their construction.

I can with confidence recommend them as being worthy the notice of Companies engaged in Internal Improvements, who may require Instruments of superior workmanship.

JAMES F. STABLER,
Superintendent of Construction of the Baltimore and Ohio Railroad.

I have examined with care several Engineers' Instruments of your Manufacture, particularly Spirit levels, and Surveyor's Compasses; and take pleasure in expressing my opinion of the excellence of the workmanship. The parts of the levels appeared well proportioned to secure facility in use, and accuracy and permanency in adjustments.

These instruments seemed to me to possess all the modern improvement of construction, of which so many have been made within these few years; and I have no doubt but they will give every satisfaction when used in the field.

WILLIAM HOWARD, U. S. Civil Engineer.
Baltimore, May 1st, 1833.

To Messrs Ewin and Heartte—As you have asked me to give my opinion of the merits of those instruments of your manufacture which I have either used or examined, I cheerfully state that as far as my opportunities of my becoming aquainted with their qualities have gone, I have great reason to think well of the skill displayed in their construction. The neatness of their workmanship has been the subject of frequent remark by myself, and of the accuracy of their performance I have received satisfactory assurance from others, whose opinion I respect, and who have had them for a considerable time in use. The efforts you have made since your establishment in this city, to relieve us of the necessity of sending elsewhere for what we may want in our line, deserve the unqualified approbation and our warm encouragement. Wishing you all the success which your enterprize so well merits, I remain, yours, &c.

B. H. LATROBE,
Civil Engineer in the service of the Baltimore and Ohio Railroad Company.

A number of other letters are in our possession and might be introduced, but are too lengthy. We should be happy to submit them upon application, to any persons desirous of perusing the same.

[For the New York American.]

GREENOUGH.

"With looks flung back and lips apart,
"Like monument of Grecian art."

In that hushed hour of deep suspense—
Where soul is hanging on the tone,
Rapt inspiration's notes dispense,
We see thy hand upon the *stone*,
Whose cold and formless mass must give
The feelings of a nation's heart;
The pride, the type, and bid it live
A monument of deathless art!
Well may thy modest head be bent,
Though genius bids thee banish fear;
The blush she has thy features lent,
Is not less graceful than the tear:
For well thou know'st no borrowed aid,
No Grecian chisel can be thine;
Its bright creations all must fade,
Before thy subject, truth divine!
No fancy here may reckless dwell,
Or bring cherubic forms to view;
Its dreams to bright perfection swell,
And demi gods once more renew.
Still kind'ling mem'ry whispers thee,
Rude as this marble lay thy land,
'Ere waked to light and liberty
By thy great model's sacred hand.
Rest! then his spirit on the stone—
Thy art must call from seeming death
Its power, and beauty blend in one,
Our Hero's, and our Sculptor's wreath! M.

January 22, 1834.

DIED

Another Revolutionary Hero gone!—Died, at Raleigh, in North Carolina, on the 14th instant, deeply regretted, Colonel William Polk, in the 74th year of his age. The deceased was amidst the band of Patriots who declared Independence in Mecklenburg county, in that State, on the 20th of May, 1775.—At the commencement of the Revolution he was appointed a subaltern officer in the regiment of the South Carolina line, commmanded by his father, General Thomas Polk, and at the close of the war he held the rank of Lieutenant Colonel in the North Carolina line, having, except during a nine months' confinement from a severe wound, been in active service during the whole of that memorable struggle. He was present at the battles of Camden, Eutaw, Brandywine, and Germantown, and in the last, was a second time severely wounded. At the battle of Guilford, which occurred during a short interval in which he was out of command, he was actively engaged as a volunteer. The Colonel was the sole surviving Field Officer of the North Carolina line. At the close of the Revolution, he became a member of the Society of Cincinnati; and in 1791 was appointed by General Washington, Supervisor of the Revenue for the District of North Carolina, which he held till the termination of the Excise System; and at the establishment of the State Bank of North Carolina, in 1810, he was appointed President of that Institution, and, for ten years, presided over that Institution with great credit to himself, and usefulness to the State.

At the commencement of the late war, he was appointed by President Madison, a Brigadier General in the Army of the United States, which for reasons then well known to the public, he declined to accept.

The Colonel has left behind him, numerous family connections and friends to deplore his loss. He has left behind him a large property, principally in valuable western Lands.

SALES OF REAL ESTATE AT AUCTION.

By James Bleecker & Sons.

Lot on the N W corner of Governeur and Madison street, 20 by 50 feet $1,600
Three story brick house and lot 38 Carmine st, 18 by 80 ft.. 3,300
Three story brick house and lot No 4 Carroll place, Bleecker st 16,000
Three story brick house and lot No 460 Washington, near Watt st, 18 ft 9 by 80 ft 4,000
4 lots corner 1st avenue and 84th st, each $102½ 410
The two story brick house and lot No 22 Cliff st, between Fulton and John sts 8,400
Do do do, No 24 Cliff st 8,500
The three story brick house and lot No 12 Vesey st, and the three story brick house and lot No 6 Barclay st, adjoining, each 25 by 100 29,850
House and lots Nos 189 and 191 Orange st, 50 ft 10 inches by 100 ft 7,000
Store and lot No 187 Washington st, 25 by 87 ft 13,000
One lot N W corner of Bleecker and Charles sts, 25 by 100 3,900
Do on Bleecker st, adjoining 2,900
Do on do near Perry st 2,750
Two story frame house and 17 years' lease of lot No 13 Dominick st, 25 by 100 ft 1,300
Two story house and lot No 78 Broome st, 25 by 87 ft.... 3,400
The house and lot No 47 Broad st, 21 ft 6 by 146, about.. 20,000
Under the direction of David Colwise, Esquire, Master in Chancery—No 9 William st, belonging to the estate of Isaac Minard, S W corner of Beaver st, lot irregular.. 13,000
No 7 William st, adjoining, lot larger 23,000
The house and lot No 60 Beaver st 9,050
Two lots on Greene street, near Spring, each 25 by 100 ft, each $2,600 5,200
Under the direction of S. Cambreleng, Esquire, Master in Chancery—House and lot No 170 Fulton street, lot 25 by 77 ft 10,600

List of Subscribers to the Railroad Journal who have paid in advance to Jan. 1, 1835, continued from last week.

Alexander Thompson, jr., New-York City.
Ramsay Crooks, Ditto.
M. C. St. John, Ditto.
J. L. C. Cozier, Lebanon, Madison co., N. Y.
James Jackson, Boston, Mass.
Woodville Hotel, Woodville, Missi.
Judge Ogden, Baton Rouge, La.
Canvass White, Princeton, N. J.
R. H. Bradford, Washington City.

RAILWAY IRON.

☞ Ninety-five tons of 1 inch by ¼ inch, *Flat Bars* in lengths of 14 to 16 feet counter sunk holes, ends cut at an angle of 45 degrees with splicing plates, nails to suit.
200 do. 1½ do. ¼ do.
40 do. 1¼ do. ¼ do.
800 do. 2 do. ¼ do.
800 do. 2½ do. ¼ do.
soon expected.

250 do. of Edge Rails of 36 lbs. per yard, with the requisite chairs, keys and pins.

Wrought Iron Rims of 30, 33, and 36 inches diameter for Wheels of Railway Cars, and of 60 inches diameter for Locomotive wheels.

Axles of 2⅛, 2⅜, 2⅝, 3, 3⅛, 3⅜, and 3½ inches diameter for Railway Cars and Locomotives of patent iron.

The above will be sold free of duty, to State Governments, and Incorporated Governments, and the Drawback taken in part payment.

A. & G. RALSTON.
9 South Front street, Philadelphia.

Models and samples of all the different kinds of Rails, Chairs, Pins, Wedges, Spikes, and Splicing Plates, in use, both in this country and Great Britain, will be exhibited to those disposed to examine them. d71meowr

NOVELTY WORKS,

Near Dry Dock, New-York.

☞ THOMAS B. STILLMAN, Manufacturer of Steam Engines, Boilers, Railroad and Mill Work, Lathes, Presses, and other Machinery. Also, Dr. Nott's Patent Tubular Boilers, which are warranted, for safety and economy, to be superior to any thing of the kind heretofore used. The fullest assurance is given that work shall be done well, and on reasonable terms. A share of public patronage is respectfully solicited. m18

STEPHENSON,

Builder of a superior style of Passenger Cars for Railroads

No. 264 Elizabeth street, near Bleecker street, New-York.

☞ RAILROAD COMPANIES would do well to examin these Cars; a specimen of which may be seen on that part o the New-York and Harlæm Railroad, now in operation. J25 tf

SURVEYORS' INSTRUMENTS.

☞ Compasses of various sizes and of superior quality, warranted.

Leveling Instruments, large and small sizes, with high magnifying powers with glasses made by Troughton, together with a large assortment of Engineering Instruments, manufactured and sold by E. & G. W. BLUNT, 154 Water street, J31 6t corner of Maidenlane.

INCOMBUSTIBLE ARCHITECTURE.

☞ INCOMBUSTIBLE dwelling-houses and buildings of all kinds devised or built in New-York, or any part of the United States, as cheap as any other combustible buildings Actual buildings and houses rendered incombustible at a small additional expense.

SHIPS of all sorts, and Steamboats, rendered incombustible, and not liable to sink, at a small expense.

For sale, 10,000 lbs. of ANTIGNIS, or Incombustible Varnish, at one dollar per lb.

Apply to C. S. RAFINESQUE, Professor of Hist. and Nat. Sciences, Chemist, Architect, &c. in Philadelphia, No. 59 North 8th street. A pamphlet given gratis.

References in New-York.—Mr. Minor, Editor of the Mechanics' Magazine; Messrs. Rushton & Aspinwall, Druggists.

Editors in the city or country, copying this advertisement, will receive a commission on any contract procured by their means. S1 R J M M & F

FOR SALE,

☞ ATLANTIC JOURNAL AND FRIEND OF KNOWLEDGE—A Quarterly Journal, by Professor Rafineseque, of Philadelphia, begun in the spring of 1832, with wood cuts, &c dedicated to Historical and Natural Sciences, Botany, Agriculture, &c. at one dollar per annum.

MEDICAL FLORA OF THE UNITED STATES, in 2 vols. with 100 plates, containing also the economical properties of 300 genera of American plants. $3.

MANUAL OF AMERICAN VINES, and Art of Making Wines, with 8 figures. 25 cents.

FISHES AND SHELLS OF THE RIVER OHIO. 1 dollar.

AMERICAN FLORIST, with 36 figures—price 36 cts.

*** Orders for these works, or any other of Professor Rafinesque's, received at this office. A9 tf J M & F

PATENT RAILROAD, SHIP AND BOAT SPIKES.

☞ The Troy Iron and Nail Factory keep constantly for sale a very extensive assortment of Wrought Spikes and Nails, from 3 to 10 inches, manufactured by the subscriber's Patent Machinery, which after five years successful operation and now almost universal use in the United States (as well as England, where the subscriber obtained a Patent,) are found superior to any ever offered in market.

Railroad Companies may be supplied with Spikes having countersink heads suitable to the holes in iron rails, to any amount and on short notice. Almost all the Railroads now in progress in the United States are fastened with Spikes made at the above named factory—for which purpose they are found invaluable, as their adhesion is more than double any common spikes made by the hammer.

☞ All orders directed to the Agent, Troy, N. Y., will be punctually attended to.

HENRY BURDEN, Agent.

Troy, N. Y. July, 1831.

☞ Spikes are kept for sale, at factory prices, by I. & J Townsend, Albany; and the principal Iron Merchants in Albany and Troy; J. I. Brower, 222 Water street, New-York; A. M. Jones, Philadelphia; T. Janviers, Baltimore; Degrand & Smith, Boston.

P. S.—Railroad Companies would do well to forward their orders as early as practical, as the subscriber is desirous of extending the manufacturing so as to keep pace with the daily increasing demand for his Spikes.

J23 1am H. BURDEN.

GRACIE, PRIME & CO. having this day taken into co-partnership JOHN CLARKSON JAY, will continue their business under the same firm.—New-York, 1st October, 1833.

TO STEAMBOAT COMPANIES.

☞ PROFESSOR RAFINESQUE, of Philadelphia, offers his services to render steamboats incombustible, and not liable to sink, even by the bursting of boilers, or striking against snags, sawyers and rocks. This will save many boats, much property, and the lives of hundreds every year. Those who neglect this easy improvement, deserve to be neglected and deserted by the public as unmindful of safety. Apply, post paid. S1 R J M M & F

☞ TOWNSEND & DURFEE, of Palmyra, *Manufacturers of Railroad Rope*, having removed their establishment to Hudson, under the name of *Durfee, May & Co.* offer to supply Rope of any required length (without splice) for inclined planes of Railroads at the shortest notice, and deliver them in any of the principal cities in the United States. As to the quality of Rope, the public are referred to J. B. Jervis, Eng. M. & H. R. R. Co., Albany; or James Archibald, Engineer Hudson and Delaware Canal and Railroad Company, Carbondale, Luzerne county, Pennsylvania.

Hudson, Columbia county, New-York, }
January 29, 1833. }

ENGINEERING AND SURVEYING INSTRUMENTS.

☞ The subscriber manufactures all kinds of Instruments in his profession, warranted equal, if not superior, in principles of construction and workmanship to any imported or manufactured in the United States; several of which are entirely *new*: among which are an Improved Compass, with a Telescope attached, by which angles can be taken with or without the use of the needle, with perfect accuracy—also, a Railroad Goniometer, with two Telescopes—and a Levelling Instrument, with a Goniometer attached, particularly adapted to Railroad purposes.

WM. J. YOUNG,
Mathematical Instrument Maker, No. 9 Dock street, Philadelphia.

The following recommendations are respectfully submitted to Engineers, Surveyors, and others interested.

Baltimore, 1832.

In reply to thy inquiries respecting the instruments manufactured by thee, now in use on the Baltimore and Ohio Railroad, I cheerfully furnish thee with the following information. The whole number of Levels now in possession of the department of construction of thy make is seven. The whole number of the "Improved Compass" is eight. These are all exclusive of the number in the service of the Engineer and Graduation Department.

Both Levels and Compasses are in good repair. They have in fact needed but little repairs, except from accidents to which all instruments of the kind are liable.

I have found that thy patterns for the levels and compasses have been preferred by my assistants generally, to any others in use, and the Improved Compass is superior to any other description of Goniometer that we have yet tried in laying the rails on this Road.

This instrument, more recently improved with a reversing telescope, in place of the vane sights, leaves the engineer scarcely any thing to desire in the formation or convenience of the Compass. It is indeed the most completely adapted to laterial angles of any simple and cheap instrument that I have yet seen, and I cannot but believe it will be preferred to all others now in use for laying of rails—and in fact, when known, I think it will be as highly appreciated for common surveying.

Respectfully thy friend,
JAMES P. STABLER, Superintendant of Construction of Baltimore and Ohio Railroad.

Philadelphia, February, 1833.

Having for the last two years made constant use of Mr. Young's "Patent Improved Compass," I can safely say I believe it to be much superior to any other instrument of the kind, now in use, and as such most cheerfully recommend it to Engineers and Surveyors. E. H. GILL, Civil Engineer.

Germantown, February, 1833.

For a year past I have used Instruments made by Mr. W. J. Young, of Philadelphia, in which he has combined the properties of a Theodolite with the common Level.

I consider these Instruments admirably calculated for laying out Railroads, and can recommend them to the notice of Engineers as preferable to any others for that purpose.

HENRY R. CAMPBELL, Eng. Philad.,
m1 1y Germant. and Norrist. Railroad'

LOCOMOTIVE ENGINES.

☞ THE AMERICAN STEAM CARRIAGECOMPANY, OF PHILADELPHIA, respectfully inform the public, and especially Railroad and Transportation Companies, that they have become sole proprietors of certain improvements in the construction of Locomotive Engines, and other railway carriages, secured to Col. Stephen H. Long, of the United States Engineers, by letters patent from the United States, and that they are prepared to execute any orders for the construction of Locomotive Engines, Tenders, &c. with which they may be favored, and pledge themselves to a punctual compliance with any engagements they may make in reference to this line of business.

They have already in their possession the requisite apparatus for the construction of three classes of engines, viz. engines weighing four, five, and six tons.

The engines made by them will be warranted to travel at the following rates of speed, viz. a six ton engine at a speed of 15 miles per hour; a five ton engine at a speed of 18 miles per hour; a four ton engine at a speed of 22 1-2 miles per hour. Their performance in other respects will be warranted to equal that of the best English engines of the same class, with respect not only to their efficiency in the conveyance of burthens, but to their durability, and the cheapness and facility of their repairs.

The engines will be adapted to the use of anthracite coal, pine wood, coke, or any other fuel hitherto used in locomotive engines.

The terms shall be quite as favorable, and even more moderate, than those on which engines of the same class can be procured from abroad.

All orders for engines, &c. and other communications in reference to the subject, will be addressed to the subscriber, in the city of Philadelphia, and shall receive prompt attention.

By order of the Company,
WILLIAM NORRIS, Secretary.

December 2d, 1833.

For further information on this subject [see No. 49, page 72 of this Journal.